Volume 1 of 2

THOMSON CONSUMER ELECTRONICS

CTC179

Color Television Basic Service Data

RCA PROSCAN

Technical Publications
P.O. Box 1976 / Indianapolis, Indiana 46206

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SAFETY NOTICE

USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by stars ★ on schematics and on the parts list in this Service Data and its bulletins. Before servicing this instrument, it is important that the service technician read and follow the "Safety Precautions" and "Product Safety Notices" in the Basic Service Data.

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SAFETY PRECAUTIONS

DO NOT OPERATE THIS INSTRUMENT OR PERMIT IT TO BE OPERATED WITHOUT ALL PROTECTIVE DEVICES INSTALLED AND FUNCTIONING. SERVICERS WHO DEFEAT SAFETY FEATURES OR FAIL TO PERFORM SAFETY CHECKS MAY BE LIABLE FOR ANY RESULTING DAMAGE, AND MAY EXPOSE THEMSELVES AND OTHERS TO POSSIBLE INJURY.

READ AND COMPLY WITH ALL CAUTION AND SAFETY-RELATED NOTES ON OR INSIDE THE RECEIVER CABINET, AND THE RECEIVER CHASSIS, OR ON THE PICTURE TUBE.

SAFETY GLASSES SHOULD BE USED WHEN SERVICING ELECTRONIC INSTRUMENTS. INADVERTENTLY OVERSTRESSING COMPONENTS MAY CAUSE THEM TO SHATTER, DISCHARGING SMALL PARTICLES.

DESIGN ALTERATION WARNING - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions may alter the safety characteristics of this receiver and create a hazard to the user. Design alterations or additions may void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

BEFORE RETURNING AN INSTRUMENT TO THE CUSTOMER, always make a safety check of the entire instrument, including, but not limited to, the following items:

FIRE AND SHOCK HAZARD

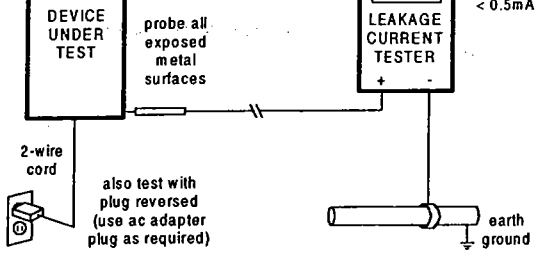
1. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs and other protective hardware have been installed in accordance with the original design.
2. Be sure that there are no cabinet openings through which an adult or a child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to: (a) spacings between picture tube and cabinet mask, (b) excessively wide cabinet ventilation slots, and (c) an improperly fitted or incorrectly secured back cover.
3. Observe original lead dress. Take care to restore leads to their original dress. Make sure that leads are not in contact with sharp edges or thermally hot parts. Always inspect in all areas for pinched, out-of-place or frayed wiring. Do not change spacing between adjacent components, or between components and printed-circuit board. Check AC power cord for damage.
4. Be certain to remove loose solder balls and all other loose foreign particles.
5. Check components, parts and/or wiring for physical evidence of damage, overheating or deterioration, and replace if necessary. Determine the cause of damage and/or overheating and, if necessary, take corrective action to remove any potential safety hazard.
6. Parts Replacement - Many TV electrical and mechanical parts have special safety-related characteristics, some of which are often not evident from visual inspection, and the protection they give cannot necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by a star (★) on schematics and in the parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part in the service data parts list may create shock, fire and/or other hazards. Always consult the appropriate current service literature for the latest information.
7. Some TV receiver chassis' normally have 85VAC (RMS) between chassis and earth ground, regardless of the AC plug polarity. Some TV receiver chassis' are electrically connected directly to one conductor of the AC power cord. Some TV receiver chassis' have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered. Thus, when servicing any unit always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose the servicer to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized AC line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.

PICTURE TUBE IMPLOSION WARNING - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number.

Do not remove, install, or otherwise handle the picture tube in any man without first putting on shatterproof goggles equipped with side shiel People not so equipped must be kept safely away while picture tubes handled. Keep the picture tube away from your body. Do not handle picture tube by its neck. Some "in-line" picture tubes are equipped wit permanently attached deflection yoke; because of potential hazard, do not to remove such "permanently attached" yokes from the picture tube.

X-RADIATION AND HIGH VOLTAGE LIMITS - Because the pict tube is the primary source of X-radiation in solid-state TV receivers, i specially constructed to prohibit X-radiation emissions. For continued radiation protection, a replacement picture tube must be the same type as original. The picture shields, mounting hardware and lenses (projection T may also perform an X-radiation protection function, and they must correctly in place. Anode connectors contain an X-radiation shield - use o the manufacturer's specified anode connectors. High voltage must measured each time servicing that involves power supply, horizontal defl tion or high voltage circuits is performed. Correct operation of the radiation circuits must also be confirmed each time these circuits are servic (X-radiation circuits may also be called "horizontal disable" or "hold-dow circuits). Read and apply high voltage limits and, if the chassis is equipped, the X-radiation protection circuit specifications. These limits a specifications are given on instrument labels and are included in this serv data. High voltage is maintained within specified limits by close-tolerar safety-related components (and adjustments) in the high voltage circuit. high voltage exceeds specified limits, check each component specified (b star) on the schematic and take corrective action.

ANTENNA LEAKAGE RESISTANCE CHECK - With the instrum AC plug removed from the AC source, connect an electrical jumper acr the two AC plug prongs. Place the instrument AC switch (if applicable) in t "on" position. Connect one lead of an ohmmeter to the AC plug prongs a touch the other ohmmeter lead, in turn, to each (exposed) antenna inp terminal screw and/or coaxial connector. If the measured resistance is l than 1.0 Megohm, or greater than 5.2 Megohm, an abnormality exists whi must be corrected before the instrument is returned to the customer. Rep this test with the AC switch in the "off" position.



LEAKAGE CURRENT HOT CHECK FOR 2-WIRE OR 3-WIR GROUNDED CORD SETS - With the instrument completely reassemble plug the AC line cord into the mains AC outlet at normal line voltage via non-polarized adapter. DO NOT GROUND THE 3RD PRONG OF TH ADAPTER AND DO NOT USE AN ISOLATION TRANSFORMER. U a leakage current tester or metering system that complies with Americ National Standards Institute (ANSI) C101.1 Leakage Current for Applianc and with Underwriters Laboratories (UL) 1492 (Section 67). With t instrument AC switch first in the "on" position and then in the "off" positio measure from a known earth ground (metal water pipe, conduit, etc.) to a exposed metal parts of the instrument (antennas, handle bracket, met cabinet, screwheads, metallic overlays, control shafts, etc.). Any curre measured must not exceed 0.5 milliampere. Reverse the adapter plug in t outlet and repeat the test. **ANY MEASUREMENTS NOT WITHIN TH LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOC HAZARD THAT MUST BE ELIMINATED BEFORE RETURNIN THE INSTRUMENT TO THE CUSTOMER OR BEFORE CO NECTING THE ANTENNA OR ACCESSORIES.** If a leakage curre tester is not available, connect a 1.5 Kohm, 10 Watt resistor, in parallel wi a 0.15μF, 150V capacitor, between earth ground and each exposed metal pa of the instrument (as shown above). Use an AC voltmeter with at least 50 ohm/volt sensitivity to measure the potential across the resistor. The pote tial measured for any exposed metal surface must not exceed 0.75 volts.

MODEL-TO-MAJOR ASSEMBLY CROSS REFERENCE

CROSS REFERENCE

MODEL/ SERVICE NO.	CHASSIS	MAJOR ASSEMBLIES
F32730SBFM1	179CM	C3,C5,C7,C9,C10,P1,R2
F32730SBJX1	179CM	C3,C5,C7,C9,C10,P1,R2
F35755MBFM1	179DK	C1,C5,C6,C7,C9,C10,P3,R2
F35755MBFM2	179CK	C3,C5,C7,C9,C10,P2,R2
F35755MBJX2	179CK	C3,C5,C7,C9,C10,P2,R2
F35760MBFM1	179DL	C2,C5,C6,C7,C9,C10,P5,R2
G35831ATLM1	179CK	C3,C5,C7,C9,C10,P2,R2
G35851LALM1	179DL	C2,C5,C6,C7,C9,C10,P5,R2
PS35130FM1	179CJ	C1,C5,C6,C7,C8,C11,P4,R3
PS35160FM1	179DJ	C2,C5,C6,C7,C8,C11,P6, R1,R3
PS35160JX1	179DJ	C2,C5,C6,C7,C8,C11,P6, R1,R3
PS35660LM1	179DJ	C2,C5,C6,C7,C8,C11,P6, R1,R3

KEY TO MAJOR ASSEMBLIES

C1 - CRT Driver PCB (2F30017-511)
C2 - CRT Driver PCB (2F30017-521)
C3 - CRT Driver PCB (2F30017-523)
C4 - D2pip PCB (2F43027-501)
C5 - D2T2pip PCB (2F43012-501)
C6 - Dyn Focus PCB (2F40009-501)
C7 - Front Panel PCB (2F42011-01A)
C8 - Headphone PCB (2F29014-01A)
C9 - Headphone PCB (2F29014-02A)
C10 - In/Out PCB (2F29012-513)
C11 - In/Out PCB (2F29012-533)
P1 - 32" Tube (A80AEJ15X09)
P2 - 35" Tube (A89AEJ15X09)
P3 - 35" Tube (A89AEX15X09)
P4 - 35" Tube (A89AFF15X09)
P5 - 35" Tube (A89AGF10X10)
P6 - 35" Tube (A89AGF11X10)
R1 - Remote Transmitter (CRK61A)
R2 - Remote Transmitter (CRK70A)
R3 - Remote Transmitter (CRK83A)

SPECIFICATIONS

General Specifications

Power Requirements:	120VAC +/-10%, 60Hz
Power Consumption:	205 watts maximum
Horizontal Resolution:	
27" CRT	560 lines (S-Vid Input)
31" CRT	650 lines (S-Vid Input)
35" CRT	700 lines (S-Vid Input)

RF Specifications

Tuning System:	Quartz-controlled multiband frequency synthesis
Band Coverage:	VHF channels 2-13 UHF channels 14-69 Cable channels 1-125
Frequency Coverage:	54-806 MHz
Antenna Inputs:	Two 75-ohm UHF/VHF
Sensitivity:	10uV

Video Specifications

Aux Video In:	1Vp-p, 75 ohms, neg sync
SVHS Luma In:	1Vp-p, 75 ohms, neg sync
SVHS Chroma In:	286mVp-p burst, 75 ohms
Aux Video Out:	1Vp-p, 75 ohms, negative sync
SVHS Luma Out:	1Vp-p, 75 ohms, negative sync
SVHS Chroma Out:	286mVp-p burst, 75 ohms
A/V Input:	1Vp-p, 75 ohms, neg sync

Audio Specifications

Frequency Response:	100-10,000 Hz (@ rated output)
Stereo Modes:	Synthetic stereo, MTS stereo, SRS stereo, Enhanced SRS
Aux Audio In:	500mVRMS typical, 2.25VRMS maximum
A/V Input:	500mVRMS typical
Input Impedance:	47Kohms (source impedance should be < 2Kohms)
Power Output:	5 watts/channel RMS into 8 ohms ±6dB, <3% THD
Fixed Audio Output:	500mVRMS into 10Kohms
External Speakers:	8 ohm recommended
Headphones:	> 32 ohms recommended

Remote Control

Transmission System:	Digitally encoded infrared light
Batteries:	CRK61: 2 AAA size CRK70: 4 AAA size CRK83: 4 AAA size
Battery Life:	One year normal use

Specifications subject to change without notice.

CIRCUIT PROTECTION

Fusible Device	Circuit Protected	Physical Location
F4001 (5A, 125V)	AC Input	Main PCB, right rear

COMPONENT NUMBERING SYSTEM

Serviceability of this chassis is enhanced by prominent roadmapping on the top and bottom of the circuit boards. The component numbering system relates to general circuit areas as follows:

100 Series - Tuner (VHF)
200 Series - Tuner (Power Supply)
300 Series - Tuner (UHF)
400 Series - Tuner (Band 4)
500 Series - Tuner (PLL)
600 Series - Tuner (IF)
700 Series - Tuner (Mixer/Osc)
800 Series - Tuner (RF Switch)
1000 Series - Interconnect (Audio)
1100 Series - Audio (Graphic EQ)
1400 Series - Audio (Input Switching)
1500 Series - Audio (Tone/Volume/Balance)
1600 Series - Audio (Stereo Decoder)
1700 Series - Audio (SRS)
1800 Series - Audio (Shutdown)
1900 Series - Audio (Power Out)
2000 Series - Interconnect (Video)
2200 Series - Audio (IF, Baseband)
2300 Series - Video (IF, Baseband)
2500 Series - Luma Processing (Edge, SVM)
2600 Series - Video (Comb Filter)
2700 Series - Luma Processing (Control)
2800 Series - Chroma Processing (Demod)
2900 Series - Chroma Processing (RGB)
3000 Series - Interconnect (Control)
3100 Series - System Control (Control)
3200 Series - System Control (User Interface)
3300 Series - System Control (Chassis Interface)
3400 Series - User Controls
3500 Series - System Control (Reset)
3800 Series - System Control (Tuner)
4000 Series - Power Supply (AC Input)
4100 Series - Power Supply (Regulator)
4200 Series - Power Supply (Degauss)
4300 Series - Deflection (Horizontal Osc)
4400 Series - Deflection (Horizontal Out)
4500 Series - Deflection (Vertical)
4600 Series - Power Supply (Standby Power)
4700 Series - Deflection (HV Secondary)
4800 Series - Deflection (Pincushion)
4900 Series - Deflection (Shutdown)
5000 Series - CRT Drivers
5200 Series - Scan Velocity Modulation
6200 Series - Field Neutralization
6300 Series - Headphone Out, A/V In
6500 Series - Video (Input Switching)
8000 Series - Interconnect (PIP)
8100 Series - Pix-In-Pix (IF)
8200 Series - Pix-In-Pix (PIP Processing)
8300 Series - Pix-In-Pix (Control)
8400 Series - Pix-In-PIx (Sync)

SCHEMATIC NOTES

1. Resistor values are in ohms (K = X1,000; Meg = X1,000,000). Tolerance is 5%, unless otherwise specified.

[ ] indicates a flat (type 1206) surface-mounted device; 1/8 watt unless otherwise specified.
/ \ indicates a flat (type 0805) surface-mounted device; 1/10 watt unless otherwise specified.
(no markings) indicates 1/4 watt, 5% tolerance axial-leaded device, unless otherwise specified.

2. Capacitor values 1.0 and above are in picofarads; values less than 1.0 are in µF, unless otherwise specified.

• • indicates a cylindrical surface mounted device; 50 volt unless otherwise specified.
[ ] indicates a flat (type 1206) surface-mounted device; 50 volt unless otherwise specified.
/ \ indicates a flat (type 0805) surface-mounted device; 50 volt unless otherwise specified.
(no markings) indicates a radial- or axial-leaded device; 50 volt unless otherwise specified.

3. DC voltages measured with NTSC color bar signal applied (via RF channel 3), except for audio voltages, which are measured with MTS stereo 1KHz signal applied. Voltages in parentheses ( ) indicate standby mode.
4. Waveforms measured with NTSC color bar signal applied (via RF channel 3), except for audio waveforms, which are measured with MTS stereo 1KHz signal applied.
5. Special symbols:

< > indicates schematic zone locator
■ indicates wire-wrap stake
indicates jumper wire (top side)
indicates "hot" ground
indicates service test point
⊙ indicates connection via point-to-point wire
indicates zero ohm chip (bottom side)
indicates "cold" ground

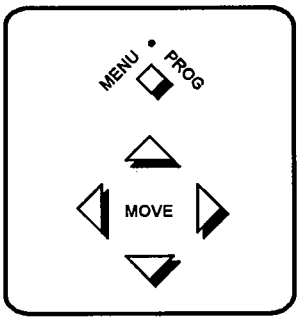
OPERATING GUIDE

Using The On-Screen Menu System

All on-screen menu items and control panels can be accessed with the *point and select* method:

1. **Point** to a menu item using the MOVE arrows on the remote.
2. **Select** a menu item by pressing the MENU · PROG button.

The CLEAR button may be used at any time to remove all on-screen displays and return to normal TV viewing.



TV MAIN MENU

The TV MAIN MENU contains the following submenus:

1 **Audio** contains the controls to select the desired stereo mode, SAP (Second Audio Program), internal/external speakers and adjust treble, bass and balance.

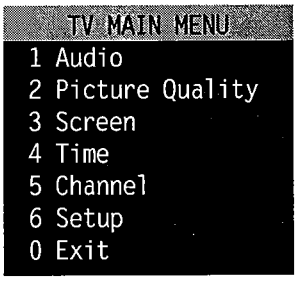
2 **Picture Quality** contains the controls to adjust contrast, color, tint, black level and sharpness. This menu also contains the Auto Color, Video Noise Reduction and Color Warmth features.

3 **Screen** contains the controls to select the way Closed Captioning information is displayed.

4 **Time** contains the controls to set the on-screen time display. This menu also contains the controls to set the Sleep Timer and Scheduler.

5 **Channel** contains the controls to set up Normal/Parent Approved channel lists, channel labels and Auto Tune channels. This menu also contains the Auto Channel Search feature.

6 **Setup** is an interactive routine that leads the user through the steps needed to configure the TV.



AUDIO Menu

The AUDIO menu contains the following controls:

Mute - Press MENU to turn the TV audio on or off. The TV sound can also be muted by pressing the MUTE button on the remote.

Tone Controls - Displays the slider controls for adjusting treble, bass and balance.

Audio Processor - Displays a list of the available audio modes.

Mono plays the sound in mono only. Use this setting when receiving broadcasts where distance makes the signal weak.

Synthetic Stereo takes a mono audio signal and enhances it to sound like it has stereo separation.

Stereo splits the incoming stereo audio signal into left and right channels. The TV displays the word STEREO when it is tuned to a program that is broadcast in stereo.

SRS Stereo is an audio processing technology that adds depth and separation to stereo audio signals.

Enhanced SRS Stereo adds even greater depth and separation to the SRS-processed audio signal.

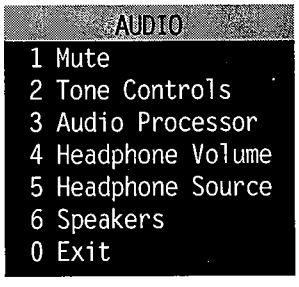
SAP (Second Audio Program) plays the program's audio in a second language (if available). The TV displays the word SAP when it is tuned to a program that is broadcast with SAP information.

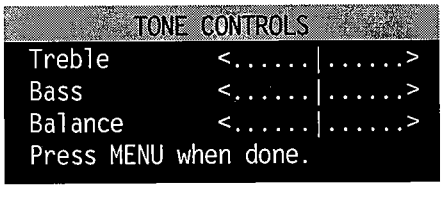
SAP in Synthetic Stereo enhances the mono SAP audio to make it sound like it has stereo separation.

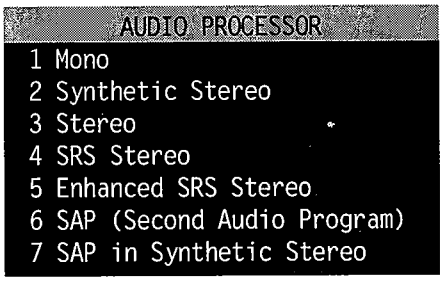
Headphone Volume - Displays the slider control for adjusting the volume of the signal at the headphone output jack.

Headphone Source - Allows the viewer to select the audio from either the main picture or small picture for the headphone signal.

Speakers - Allows the viewer to turn the TV's internal (and external, if connected) speakers on or off.

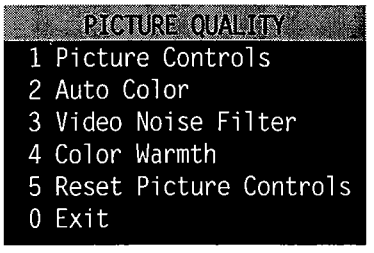






OPERATING GUIDE (Continued)

PICTURE QUALITY Menu



The PICTURE QUALITY menu contains the following controls:

Picture Controls - Displays the slider controls for adjusting picture contrast, color, tint, black level (brightness) and sharpness.

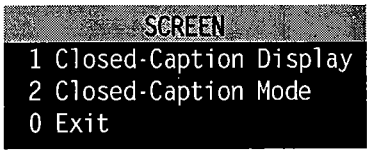
Auto Color - This feature automatically corrects the color of the picture when switching from channel to channel.

Video Noise Filter - This feature is effective in reducing video noise without losing overall picture sharpness.

Color Warmth - This feature allows the viewer to select the picture's color temperature: **Cool** shifts color temperature towards blue and **Warm** shifts color temperature towards red.

Reset Picture Controls - Allows the viewer to quickly return the Picture Quality adjustments to the factory settings.

SCREEN Menu



The SCREEN menu contains the following controls:

Closed-Caption Display - Displays a list of the ways in which closed captioning information can be displayed.

Off prevents captioning information from being displayed.

On always displays captioning information whenever it is broadcast.

On when sound is muted displays captioning information (when broadcast) whenever the audio is muted.

Closed-Caption Mode - Displays a list of available modes for displaying the captioning information. Not all modes are available on all channels at all times.

TIME Menu

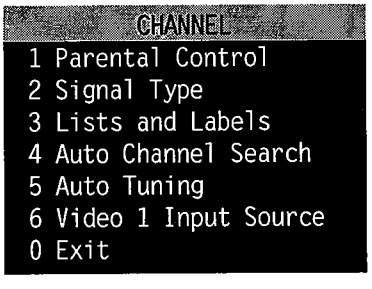
The TIME menu contains the following controls:

Sleep Timer - Allows the viewer to set the amount of time before the TV turns itself off.

Schedule - Allows the viewer to set the TV to turn itself on (and back off, if desired) to a specific channel at a certain time. The schedule must be turned ON to function; this allows the schedule information to be retained even if the schedule is turned off.

Set Time - Allows the viewer to set the on-screen time display. Time must be set before the Schedule feature can work.

CHANNEL Menu



The CHANNEL menu contains the following controls:

Parental Control - Allows the viewer to limit access to selected channels. When Parental Control is on, the TV's front panel controls no longer provide access to the on-screen menus. Channels not specified as parent approved can only be accessed with the remote hand unit.

Signal Type - Allows the viewer to select off-air or cable operation.

Lists and Labels - Allows the viewer to edit the channel scan list, assign a four character label (up to 32 labels can be stored), and specify whether each channel is parent approved.

Auto Channel Search - Enabling the Auto Channel Search feature causes the TV to search automatically for all channels available through the antenna input(s). Active channels are added to the channel list; weak channels or channels with no signal are removed from the channel list.

Auto Tuning - This feature allows the viewer to program the TV to automatically tune to a specific channel whenever VCR1, VCR2·LD or DSS·CABLE is selected via the remote hand unit.

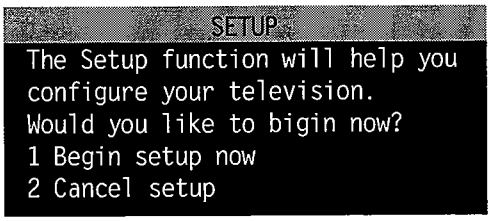
Video 1 Input Source - Tells the TV which input jack (VIDEO or S-VIDEO) to use when the Video 1 input is selected.

OPERATING GUIDE (Continued)

SETUP Menu

Activating the SETUP function initiates an interactive routine to help the viewer configure the TV to match the home environment and viewer preferences. The following functions can be performed via the SETUP routine:

- Search for available channels
- Set the time
- Make channel lists and labels
- Set the VCR1 channel
- Set the VCR2·LD channel
- Set the DSS·CABLE channel


SETUP
The Setup function will help you configure your television.
Would you like to bigin now?
1 Begin setup now
2 Cancel setup

Programming The Remote

The universal remote can be programmed to control most brands of remote controllable TV's, VCR's and cable boxes, as well as RCA brand laserdisc players, audio equipment and DSS receivers. Refer to the detailed instructions in the owner's manual.

Field Neutralization Switch

This TV has an extra-large picture tube, which makes it vulnerable to the effects of the Earth's magnetic field. The POLARITY and STRENGTH switches may need to be reset if the TV is repositioned or moved to a different room. If the picture is noticeably tilted, change the switch settings as follows:

1. Set the STRENGTH switch to the *Off* position.
2. Move the STRENGTH switch to the *Low* position.
   a. If the picture gets better, but not perfect, move the STRENGTH switch to the *High* position.
   b. If the picture gets worse, change the position of the POLARITY switch. If the picture gets better, but not perfect, move the STRENGTH switch to the *High* position.

Pix-In-Pix (PIP) Operation

The PIP feature allows the viewer to display a second, smaller picture on top of the main picture. There are six remote buttons that control the way the PIP window is displayed:

PIP brings up the small picture window. Press PIP again to remove the window.

MOVE PIP sequentially moves the PIP window around the four corners of the display. The ARROW buttons can be used to move the PIP window anywhere on the screen.

FREEZE takes a snapshot of the video in the PIP window. To unfreeze the video, either change channels in the PIP window or press the SWAP button.

SWAP switches, or "swaps" the video from the main picture with the video from the PIP window.

CH CTRL switches the CHAN UP and CHAN DN buttons to affect the PIP window instead of the main picture. Press CH CTRL again to return control to the main picture.

SCAN causes the TV to automatically scan through the channel list. If channel control is on the main picture, then the main picture will scan through the channels. If channel control is on the PIP window, then the PIP picture will scan through the channels. Each channel is displayed for four seconds before the TV automatically tunes to the next channel in the list.

On-Screen Program Details

If Extended Data Services are available for a particular channel, this information can be accessed by pressing the DISPLAY button. Press DISPLAY once to display the channel marker. Press DISPLAY again to bring up the program title (if available). Press DISPLAY again to bring up other program details (if available). Press DISPLAY again to clear the screen.

External Speakers and Audio Components

This chassis features several options for connecting external components to enhance sound quality.

- Connect speakers to the FRONT SPEAKERS terminals to enhance the stereo sound and improve stereo separation.
- Connect speakers to the REAR SPEAKERS terminals for surround sound effects.
- Connect a subwoofer to the L/MONO HI-FI OUTPUT to improve low frequency response.
- To connect to a stereo amplifier:
  If the stereo amplifier has its own remote for volume control, use the FIXED OUTPUT jacks.
  If the TV remote is being used for volume control, use the HI-FI OUTPUT jacks.

DISASSEMBLY PROCEDURES

Cabinet Back Cover Removal

The cabinet back cover is held in place with several 1/4" hex head screws. The number of (and placement of) screws varies with the cabinet design. Remove screws as necessary to release the cabinet back cover.

Chassis Service Position

1. Remove the cabinet back cover.
2. Remove 1/4" hex head screws and release tabs as necessary to remove the chassis back panel.
3. Remove two (2) screws, then release two tabs to remove the chassis side rail (one each side). At this point, the chassis can be lifted out of the cabinet and tilted up for service with all cables still connected.

Chassis Removal

1. Remove the cabinet back cover.
2. Remove 1/4" hex head screws and release tabs as necessary to remove the chassis back panel.

NOTE: During disassembly, note the orientation of the power cord strain relief. During reassembly, make sure that the power cord is correctly installed.

3. Remove two (2) screws, then release two tabs to remove the chassis side rail (one each side).
4. Discharge the anode lead to the picture tube ground strap and remove the anode lead before disconnecting other cables.

Front Bezel Removal

1. Remove the cabinet back cover.
2. Remove two (2) screws, then release two tabs to remove the chassis side rail (one each side). Slide the chassis to the rear to gain access to the customer control panel.
3. Release tabs as necessary to release the Front Panel PCB.
4. Disconnect the speaker cable, headphone cable and A/V input cable from the In/Out PCB.

NOTE: The front bezel is held in place by a number of screws and tabs around the perimeter of the picture tube. The screws are provided in the event that one or more tabs are broken during the replacement of the bezel assembly. If a tab is broken, install one of these screws into a boss near the broken tab.

5. Locate and remove any screws holding the bezel assembly to the cabinet wrap.
6. Carefully work around the perimeter of the picture tube, gradually releasing the bezel tabs. The tabs are ratcheted so they can be released one notch at a time. It is not possible to completely release one tab without partially releasing the other tabs.

Button Removal

1. Remove the cabinet back cover.
2. Remove the front bezel to gain easy access to the button assembly.
3. Carefully pry the button assembly from the mounting posts.

NOTE: Carefully press the new button assembly onto the mounting posts, making sure that the assembly is fully seated. If the assembly does not fit firmly in place, it may be necessary to melt (using a soldering iron) the tips of some of the mounting posts to make sure the assembly stays in place.

Picture Tube Removal

CAUTION: Use safety goggles and work gloves to protect eyes and hands when working with the picture tube.

1. Remove the cabinet back cover.
2. Remove the chassis assembly.
3. Carefully place the instrument face down on a soft surface (to avoid scratching the picture tube).
4. Remove the picture tube mounting screws and carefully lift the picture tube up and out of the cabinet.
5. Remove the ground strap, degaussing coil, field neutralization coil and scan velocity modulation (SVM) coil from the old tube and install on the new tube.

CAUTION: The deflection yoke is permanently bonded to the picture tube *Do not* try to remove the yoke assembly from the picture tube.

ALIGNMENT PROCEDURES

Operating Conditions

Unless otherwise noted, the following conditions must be observed when aligning the CTC179 chassis:

1. Chassis must be operated from a 120VAC isolation transformer, with line voltage set to 120VAC (±2.0V).
2. Picture controls (brightness, contrast, etc.) must be set to factory presets via the Picture Quality menu.
3. Procedures must be performed in the sequence given.
4. A 10X probe must be used for oscilloscope and frequency measurements.
5. Minimum warm-up time is 10 minutes.

Required Test Equipment

- Dual-Trace Oscilloscope
- Digital Voltmeter
- Frequency Counter
- Audio Signal Generator
- NTSC Signal Generator (B&K 1249, or equivalent)
- MTS Signal Generator (B&K 2009, or equivalent)
- Sweep/Marker Generator (or Standard Signal Generator)
- TAG001 Service Generator (stock # 215568)
- DC Power Supply (5.0V/0.25A) for TAG001

X-Ray Shutdown Check

NOTE: R4912 is factory sealed - *do not adjust.* Refer to **Replacement Parts** for kit information.

The following procedure should be performed prior to, and upon completion of service:

1. Momentarily apply a short between the shutdown test point (JW166 on the In/Out PCB) and chassis ground (Main PCB tuner shield). The instrument must shutdown immediately, then turn back on after ~ 2 seconds.
2. Apply and maintain a short between the shutdown test point and chassis ground (Main PCB tuner shield). The instrument must shutdown immediately and remain shutdown (the instrument will attempt to restart several times, then remain off).
3. Remove the short from JW166.
4. Enter the **Service Mode** and reset the error code parameter(s) to "0".

Service Mode

Most of the alignments for this chassis are software-driven; adjustments are made by modifying parameter values via the service menu. When parameter values are modified, the corresponding T-chip (U2001) registers, tuner (U501) registers and EEprom (U3102 and U8302) locations are updated. Parameters are grouped as follows:

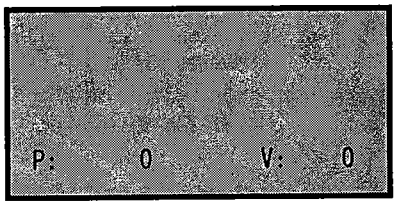
Group 0 - Instrument Parameters
Group 1 - Chassis Parameters
Group 2 - Tuner Parameters
Group 3 - PIP Tuner Parameters

A complete list of the software alignment parameters is shown in Table 1.

Entering the Service Mode

1. Press and release the POWER button to turn the instrument on.
2. Press and *hold* the MENU button.
   a. Press and release the POWER button.
   b. Press and release the VOL+ button.
3. Release the MENU button.

The instrument will display the following menu:



The CH ∧ and CH ∨ buttons on the front panel (or the remote transmitter) are used to change the parameter (P) number. The VOL + and VOL - buttons are used to change the parameter value (V).

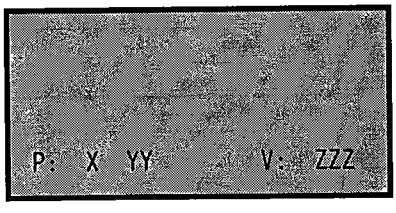
NOTE: Attempting to change the parameter number (using CH ∧ or CH ∨) at this point will cause the instrument to exit the service mode. A valid security code must be entered (using VOL + or VOL -) before selecting an alignment parameter.

Security Codes

When the service mode is first turned on, the parameter will be "0", which does not correspond to an alignment. This is the security code parameter, the purpose of which is to prevent accidental entry into the parameter groups. The value for parameter "0" must be correctly set to access the four parameter groups as follows:

Group 0 - set value to 76
Group 1 - set value to 77
Group 2 - set value to 78
Group 3 - set value to 79

Once a security code has been set, pressing CH ∧ or CH ∨ will result in the following display:



Where: X = parameter group
YY = parameter number
ZZZ = current value

ALIGNMENT PROCEDURES (Continued)

At this point, the CH ∧ and CH ∨ buttons can be used to change the parameter number and the VOL + and VOL - buttons can be used to change the value of the parameter selected. To select a different parameter group, press CH ∧ or CH ∨ to return to parameter "0" and enter the security code that corresponds to the desired group.

Error Codes

If certain failures occur in the chassis, error codes will be stored in the chassis EEprom. These error codes are displayed in the service mode as group "0" parameters "1", "2" and "3". Parameter "1" stores the error code for the first failure experienced by the instrument. Similarly, parameter "2" stores the error code for the second failure. Parameter "3" is automatically updated to display the error code for the most recent failure experienced by the instrument. Error codes are summarized in Table 2.

The presence of a "0" in the error code values indicates that no failures have occurred since the time when the error code parameters were reset. These error codes can (and should) be reset to "0" after servicing with the VOL + and VOL - buttons.

Because a failure of a bus IC is a possible reason for needing service, normal acknowledgment checking is disabled in the service mode. If an IIC device has failed, its address will be stored in the error code area.

Setup Screen

A 10 IRE flat field is available in the service mode by pressing the MENU button. In this mode, U3101 shorts the video input to ground at the video matrix switch (U6501) and presets the brightness control for 10 IRE. Pressing the MENU button again returns the display to the external signal. The service line feature is not supported in the CTC179 chassis.

Exiting The Service Mode

The service mode can be exited at any time by pressing the POWER button. No additional steps are required to write new data into the EEprom(s); new data is entered as parameter values are changed.

NOTE: On some early production instruments, it is necessary to turn the power off, then back on to write new data into the EEprom(s).

Parameter		Description	Parameter		Description	Parameter		Description
	0	Security Pass	1	8	D2PIP Contrast	2	40/41/42	Main Ch. 68 Sec/Sgl/Pri
0	1	Error Code	1	9	D2PIP Chroma Level	2	43/44/45	Main Ch. 76 Sec/Sgl/Pri
0	2	Error Code	1	10	D2PIP Tint	2	46/47/48	Main Ch. 93 Sec/Sgl/Pri
0	3	Error Code	1	11	Factory Tint	2	49/50/51	Main Ch. 110 Sec/Sgl/Pri
0	4	Horizontal Phase	1	12	Factory Contrast	2	52/53/54	Main Ch. 120 Sec/Sgl/Pri
0	5	Vertical Centering	1	13	Red Blanking (Sub-Bias)	2	55/56/57	Main Ch. 125 Sec/Sgl/Pri
0	6	Horizontal Size	1	14	Grn Blanking (Sub-Bias)	2	58	Main IF Filter 1
0	7	Pincushion Amplitude	1	15	Blu Blanking (Sub-Bias)	2	59	Main IF Filter 2
0	8	Pincushion Tilt	1	16	Red Blanking (Bias)	3	1/2/3	PIP Ch. 2 Sgl/Sec/Pri
0	9	Vertical Size	1	17	Grn Blanking (Bias)	3	4/5/6	PIP Ch. 3 Sgl/Sec/Pri
0	10	Vertical Linearity	1	18	Blu Blanking (Bias)	3	7/8/9	PIP Ch. 6 Sgl/Sec/Pri
0	11	Vertical S-Correction	1	19	Stereo VCO	3	10/11/12	PIP Ch. 99 Sgl/Sec/Pri
0	12	Pincushion Bottom Corner	1	20	SAP VCO	3	13/14/15	PIP Ch. 17 Sgl/Sec/Pri
0	13	Pincushion Top Corner	1	21	Stereo Lowpass Filter	3	16/17/18	PIP Ch. 18 Sgl/Sec/Pri
0	14	Red Bias	1	22	SAP Filter	3	19/20/21	PIP Ch. 13 Sgl/Sec/Pri
0	15	Green Bias	1	23	Wideband DBX	3	22/23/24	PIP Ch. 29 Sgl/Sec/Pri
0	16	Blue Bias	1	24	Spectral DBX	3	25/26/27	PIP Ch. 41 Sgl/Sec/Pri
0	17	Red Drive	2	1/2/3	Main Ch. 2 Sec/Sgl/Pri	3	28/29/30	PIP Ch. 47 Sgl/Sec/Pri
0	18	Green Drive	2	4/5/6	Main Ch. 3 Sec/Sgl/Pri	3	31/32/33	PIP Ch. 50 Sgl/Sec/Pri
0	19	Blue Drive	2	7/8/9	Main Ch. 6 Sec/Sgl/Pri	3	34/35/36	PIP Ch. 51 Sgl/Sec/Pri
0	20	Blue Sub Bias	2	10/11/12	Main Ch. 99 Sec/Sgl/Pri	3	37/38/39	PIP Ch. 57 Sgl/Sec/Pri
0	21	Red Sub Bias	2	13/14/15	Main Ch. 17 Sec/Sgl/Pri	3	40/41/42	PIP Ch. 68 Sgl/Sec/Pri
0	22	Green Sub Bias	2	16/17/18	Main Ch. 18 Sec/Sgl/Pri	3	43/44/45	PIP Ch. 76 Sgl/Sec/Pri
1	1	IF VCO Free Run	2	19/20/21	Main Ch. 13 Sec/Sgl/Pri	3	46/47/48	PIP Ch. 93 Sgl/Sec/Pri
1	2	4.5 MHz Trap	2	22/23/24	Main Ch. 29 Sec/Sgl/Pri	3	49/50/51	PIP Ch. 110 Sgl/Sec/Pri
1	3	IF APC Offset	2	25/26/27	Main Ch. 41 Sec/Sgl/Pri	3	52/53/54	PIP Ch. 120 Sgl/Sec/Pri
1	4	Video Level	2	28/29/30	Main Ch. 47 Sec/Sgl/Pri	3	55/56/57	PIP Ch. 125 Sgl/Sec/Pri
1	5	FM Level	2	31/32/33	Main Ch. 50 Sec/Sgl/Pri	3	58	PIP IF Filter 1
1	6	RF AGC Delay	2	34/35/36	Main Ch. 51 Sec/Sgl/Pri	3	59	PIP IF Filter 2
1	7	D2PIP Brightness	2	37/38/39	Main Ch. 57 Sec/Sgl/Pri			

Table 1 - Service Menu Parameters

ALIGNMENT PROCEDURES (Continued)

D2T2PIP TUNER PARAMETERS (Group 3)

IF Alignment

Test Point:	U8101-4 (IF AGC)	D2T2pip PCB
Adjust:	Parameter #58	Range: 0 - 63
	Parameter #59	Range: 0 - 63

1. Tune the instrument to receive the color bar signal.
2. Connect the DC voltmeter to U8101 pin 4; use the tuner shield as ground reference.
3. Adjust *IF Filter 2* (parameter #59) for minimum DC voltage at U8101-4.
4. Adjust *IF Filter 1* (parameter #58) for minimum DC voltage at U8101-4.
5. Repeat steps 3 and 4.

Band 2 Manual Alignment

Test Points:	jct. R509/R510 (Vt)	D2T2pip PCB
	C8117+ (RF AGC)	D2T2pip PCB
Adjust:	L104 (Band 2 Sgl)	D2T2pip PCB
	L107 (Band 2 Pri)	D2T2pip PCB
	L109 (Band 2 Sec)	D2T2pip PCB
	L703 (Band 2 Osc)	D2T2pip PCB

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter to the junction of R509 and R510; use the tuner shield as ground reference.
3. Set the service generator for Channel 50 output. Tune the instrument to receive Channel 50.
4. Adjust (knife) the *Band 2 Oscillator* coil (L703) for 4.9VDC (±0.1VDC).
5. Reconnect the DC voltmeter across C8117.
6. Select parameter #31 and record its present value, then adjust parameter #31 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 2 Single-Tuned* coil (L104) alignment is acceptable; return parameter #31 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 2 Single-Tuned* coil (L104) and repeat this step.
7. Select parameter #32 and record its present value, then adjust parameter #32 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 2 Secondary* coil (L109) alignment is acceptable; return parameter #32 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 2 Secondary* coil (L109) and repeat this step.
8. Select parameter #33 and record its present value, then adjust parameter #33 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 2 Primary* coil (L107) alignment is acceptable; return parameter #33 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 2 Primary* coil (L107) and repeat this step.

Band 1 Manual Alignment

Test Points:	jct. R509/R510 (Vt)	D2T2pip PCB
	C8117+ (RF AGC)	D2T2pip PCB
Adjust:	L105 (Band 1 Sgl)	D2T2pip PCB
	L108 (Band 1 Pri)	D2T2pip PCB
	L111 (Band 1 Sec)	D2T2pip PCB
	L704 (Band 1 Osc)	D2T2pip PCB

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.

Error Code	Error	Condition Indicated
17	Bus Fault	IIC or IM bus is latched and main micro is unable to communicate with other IC's
18	DC Detect	1. Main power supply shutdown 2. XRP tripped 3. DC detected on speaker output
22	Run Supply Momentary Dropout	Run supply momentarily dipped and recovered
23	Run Supply Shutdown	Run supply has shutdown
24	System Stack Overflow	Software error
25	PIP Module Error	PIP module not responding to communications
26	User Stack Overflow	Software error
28	Watchdog Timeout	Software error
30	XRP Shutdown	X-ray overvoltage detected by U2001
72	Bus Expander Fault	Failure to communicate with bus expander U2502
73	Bus Expander Fault	Failure to communicate with bus expander U2502
128	Stereo Demux Fault	Failure to communicate with stereo decoder U1600
136	TVB Fault	Failure to communicate with tone/volume/balance U1503
138	TVB Fault	Failure to communicate with tone/volume/balance U1504
150	Video Matrix Switch Fault	Failure to communicate with video matrix switch U6501
154	Audio Matrix Switch Fault	Failure to communicate with audio matrix switch U1402
186	T2 Chip Fault	Failure to communicate with T2 chip U2001
194	Tuner Fault	Failure to communicate with tuner PLL U501

Table 2 - Service Menu Error Codes

ALIGNMENT PROCEDURES (Continued)

2. Connect the DC voltmeter to the junction of R509 and R510; use the tuner shield as ground reference.
3. Set the service generator for Channel 17 output. Tune the instrument to receive Channel 17.
4. Adjust (knife) the *Band 1 Oscillator* coil (L704) for 4.6VDC (±0.1VDC).
5. Reconnect the DC voltmeter across C8117.
6. Select parameter #13 and record its present value, then adjust parameter #13 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 1 Single-Tuned* coil (L105) alignment is acceptable; return parameter #13 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 1 Single-Tuned* coil (L105) and repeat this step.
7. Select parameter #14 and record its present value, then adjust parameter #14 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 1 Secondary* coil (L111) alignment is acceptable; return parameter #14 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 1 Secondary* coil (L111) and repeat this step.
8. Select parameter #15 and record its present value, then adjust parameter #15 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 1 Primary* coil (L108) alignment is acceptable; return parameter #15 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 1 Primary* coil (L108) and repeat this step.

Band 3 Manual Alignment

Test Points:	jct. R509/R510 (Vt)	D2T2pip PCB
	C8117+ (RF AGC)	D2T2pip PCB
Adjust:	L302 (Band 3 Sgl)	D2T2pip PCB
	L304 (Band 3 Pri)	D2T2pip PCB
	L305 (Band 3 Sec)	D2T2pip PCB
	L701 (Band 3 Osc)	D2T2pip PCB

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter to the junction of R509 and R510; use the tuner shield as ground reference.
3. Set the service generator for Channel 125 output. Tune the instrument to receive Channel 125.
4. Adjust (knife) the *Band 3 Oscillator* coil (L701) for 4.8VDC (±0.1VDC).
5. Reconnect the DC voltmeter across C8117.
6. Select parameter #55 and record its present value, then adjust parameter #55 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 3 Single-Tuned* coil (L302) alignment is acceptable; return parameter #55 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 3 Single-Tuned* coil (L302) and repeat this step.
7. Select parameter #56 and record its present value, then adjust parameter #56 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 3 Secondary* coil (L305) alignment is acceptable; return parameter #56 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 3 Secondary* coil (L305) and repeat this step.
8. Select parameter #57 and record its present value, then adjust parameter #57 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 3 Primary* coil (L304) alignment is acceptable; return parameter #57 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 3 Primary* coil (L304) and repeat this step.

Electronic RF Alignment

Test Point:	C8117+ (RF AGC)	D2T2pip PCB
Adjust:	Parameter #'s 1 thru 57	Range: 0 - 63

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter across C8117.
3. Set the service generator for Channel 2 output. Tune the instrument to receive Channel 2.
4. Adjust *Channel 2 Single-Tuned* (parameter #1) for minimum DC voltage.
5. Adjust *Channel 2 Secondary* (parameter #2) for minimum DC voltage.
6. Adjust *Channel 2 Primary* (parameter #3) for minimum DC voltage.
7. Repeat steps 4 through 6. The adjustments must be repeated to assure correct alignment.
8. Change the service generator and the instrument to Channel 3. Adjust *CH3 Sgl/Sec/Pri* (parameter #'s 4, 5 and 6) for minimum DC voltage, then repeat the adjustment.
9. Change the service generator and the instrument to Channel 6. Adjust *CH6 Sgl/Sec/Pri* (parameter #'s 7, 8 and 9) for minimum DC voltage, then repeat the adjustment.
10. Change the service generator and the instrument to Channel 99. Adjust *CH99 Sgl/Sec/Pri* (parameter #'s 10, 11 and 12) for minimum DC voltage, then repeat the adjustment.
11. Change the service generator and the instrument to Channel 17. Adjust *CH17 Sgl/Sec/Pri* (parameter #'s 13, 14 and 15) for minimum DC voltage, then repeat the adjustment.
12. Change the service generator and the instrument to Channel 18. Adjust *CH18 Sgl/Sec/Pri* (parameter #'s 16, 17 and 18) for minimum DC voltage, then repeat the adjustment.
13. Change the service generator and the instrument to Channel 13. Adjust *CH13 Sgl/Sec/Pri* (parameter #'s 19, 20 and 21) for minimum DC voltage, then repeat the adjustment.
14. Change the service generator and the instrument to Channel 29. Adjust *CH29 Sgl/Sec/Pri* (parameter #'s 22, 23 and 24) for minimum DC voltage, then repeat the adjustment.
15. Change the service generator and the instrument to Channel 41. Adjust *CH41 Sgl/Sec/Pri* (parameter #'s 25, 26 and 27) for minimum DC voltage, then repeat the adjustment.

ALIGNMENT PROCEDURES (Continued)

16. Change the service generator and the instrument to Channel 47. Adjust *CH47 Sgl/Sec/Pri* (parameter #'s 28, 29 and 30) for minimum DC voltage, then repeat the adjustment.
17. Change the service generator and the instrument to Channel 50. Adjust *CH50 Sgl/Sec/Pri* (parameter #'s 31, 32 and 33) for minimum DC voltage, then repeat the adjustment.
18. Change the service generator and the instrument to Channel 51. Adjust *CH51 Sgl/Sec/Pri* (parameter #'s 34, 35 and 36) for minimum DC voltage, then repeat the adjustment.
19. Change the service generator and the instrument to Channel 57. Adjust *CH57 Sgl/Sec/Pri* (parameter #'s 37, 38 and 39) for minimum DC voltage, then repeat the adjustment.
20. Change the service generator and the instrument to Channel 68. Adjust *CH68 Sgl/Sec/Pri* (parameter #'s 40, 41 and 42) for minimum DC voltage, then repeat the adjustment.
21. Change the service generator and the instrument to Channel 76. Adjust *CH76 Sgl/Sec/Pri* (parameter #'s 43, 44 and 45) for minimum DC voltage, then repeat the adjustment.
22. Change the service generator and the instrument to Channel 93. Adjust *CH93 Sgl/Sec/Pri* (parameter #'s 46, 47 and 48) for minimum DC voltage, then repeat the adjustment.
23. Change the service generator and the instrument to Channel 110. Adjust *CH110 Sgl/Sec/Pri* (parameter #'s 49, 50 and 51) for minimum DC voltage, then repeat the adjustment.
24. Change the service generator and the instrument to Channel 120. Adjust *CH120 Sgl/Sec/Pri* (parameter #'s 52, 53 and 54) for minimum DC voltage, then repeat the adjustment.
25. Change the service generator and the instrument to Channel 125. Adjust *CH125 Sgl/Sec/Pri* (parameter #'s 55, 56 and 57) for minimum DC voltage, then repeat the adjustment.

MAIN TUNER PARAMETERS (Group 2)

IF Alignment

Test Point:	TP150 (IF AGC)	Main PCB
Adjust:	Parameter #58	Range: 0 - 63
	Parameter #59	Range: 0 - 63

1. Tune the instrument to receive the color bar signal.
2. Connect the DC voltmeter to TP150 (U2001 pin 11); use the tuner shield as ground reference.
3. Adjust *IF Filter 2* (parameter #59) for minimum DC voltage at TP150.
4. Adjust *IF Filter 1* (parameter #58) for minimum DC voltage at TP150.
5. Repeat steps 3 and 4.

Band 2 Manual Alignment

Test Points:	jct. R509/R510 (Vt)	Main PCB
	C2309+ (RF AGC)	Main PCB
Adjust:	L104 (Band 2 Sgl)	Main PCB
	L107 (Band 2 Pri)	Main PCB
	L109 (Band 2 Sec)	Main PCB
	L703 (Band 2 Osc)	Main PCB

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter to the junction of R509 and R510; use the tuner shield as ground reference.
3. Set the service generator for Channel 50 output. Tune the instrument to receive Channel 50.
4. Adjust (knife) the *Band 2 Oscillator* coil (L703) for 4.9VDC (±0.1VDC).
5. Reconnect the DC voltmeter across C2309.
6. Select parameter #32 and record its present value, then adjust parameter #32 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 2 Single-Tuned* coil (L104) alignment is acceptable; return parameter #32 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 2 Single-Tuned* coil (L104) and repeat this step.
7. Select parameter #31 and record its present value, then adjust parameter #31 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 2 Secondary* coil (L109) alignment is acceptable; return parameter #31 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 2 Secondary* coil (L109) and repeat this step.
8. Select parameter #33 and record its present value, then adjust parameter #33 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 2 Primary* coil (L107) alignment is acceptable; return parameter #33 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 2 Primary* coil (L107) and repeat this step.

Band 1 Manual Alignment

Test Points:	jct. R509/R510 (Vt)	Main PCB
	C2309+ (RF AGC)	Main PCB
Adjust:	L105 (Band 1 Sgl)	Main PCB
	L108 (Band 1 Pri)	Main PCB
	L111 (Band 1 Sec)	Main PCB
	L704 (Band 1 Osc)	Main PCB

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter to the junction of R509 and R510; use the tuner shield as ground reference.
3. Set the service generator for Channel 17 output. Tune the instrument to receive Channel 17.
4. Adjust (knife) the *Band 1 Oscillator* coil (L704) for 4.6VDC (±0.1VDC).
5. Reconnect the DC voltmeter across C2309.

ALIGNMENT PROCEDURES (Continued)

6. Select parameter #14 and record its present value, then adjust parameter #14 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 1 Single-Tuned* coil (L105) alignment is acceptable; return parameter #14 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 1 Single-Tuned* coil (L105) and repeat this step.
7. Select parameter #13 and record its present value, then adjust parameter #13 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 1 Secondary* coil (L111) alignment is acceptable; return parameter #13 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 1 Secondary* coil (L111) and repeat this step.
8. Select parameter #15 and record its present value, then adjust parameter #15 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 1 Primary* coil (L108) alignment is acceptable; return parameter #15 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 1 Primary* coil (L108) and repeat this step.

Band 3 Manual Alignment

Test Points:	jct. R509/R510 (Vt)	Main PCB
	C2309+ (RF AGC)	Main PCB
Adjust:	L302 (Band 3 Sgl)	Main PCB
	L304 (Band 3 Pri)	Main PCB
	L305 (Band 3 Sec)	Main PCB
	L701 (Band 3 Osc)	Main PCB

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter to the junction of R509 and R510; use the tuner shield as ground reference.
3. Set the service generator for Channel 125 output. Tune the instrument to receive Channel 125.
4. Adjust (knife) the *Band 3 Oscillator* coil (L701) for 4.8VDC (±0.1VDC).
5. Reconnect the DC voltmeter across C2309.
6. Select parameter #56 and record its present value, then adjust parameter #56 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 3 Single-Tuned* coil (L302) alignment is acceptable; return parameter #56 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 3 Single-Tuned* coil (L302) and repeat this step.
7. Select parameter #55 and record its present value, then adjust parameter #55 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 3 Secondary* coil (L305) alignment is acceptable; return parameter #55 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 3 Secondary* coil (L305) and repeat this step.
8. Select parameter #57 and record its present value, then adjust parameter #57 through its range (0 - 63). If a "null" in the AGC voltage appears, the *Band 3 Primary* coil (L304) alignment is acceptable; return parameter #57 to the recorded value and proceed to the next step. If a "null" does not appear, adjust (knife) the *Band 3 Primary* coil (L304) and repeat this step.

Electronic RF Alignment

Test Point:	C2309+ (RF AGC)	Main PCB
Adjust:	Parameter #'s 1 thru 57	Range: 0 - 63

1. Connect the TAG001 Service Generator as described in the TAG001 user's manual.
2. Connect the DC voltmeter across C2309.
3. Set the service generator for Channel 2 output. Tune the instrument to receive Channel 2.
4. Adjust *Channel 2 Secondary* (parameter #1) for minimum DC voltage.
5. Adjust *Channel 2 Single-Tuned* (parameter #2) for minimum DC voltage.
6. Adjust *Channel 2 Primary* (parameter #3) for minimum DC voltage.
7. Repeat steps 4 through 6. The adjustments must be repeated to assure correct alignment.
8. Change the service generator and the instrument to Channel 3. Adjust *CH3 Sec/Sgl/Pri* (parameter #'s 4, 5 and 6) for minimum DC voltage, then repeat the adjustment.
9. Change the service generator and the instrument to Channel 6. Adjust *CH6 Sec/Sgl/Pri* (parameter #'s 7, 8 and 9) for minimum DC voltage, then repeat the adjustment.
10. Change the service generator and the instrument to Channel 99. Adjust *CH99 Sec/Sgl/Pri* (parameter #'s 10, 11 and 12) for minimum DC voltage, then repeat the adjustment.
11. Change the service generator and the instrument to Channel 17. Adjust *CH17 Sec/Sgl/Pri* (parameter #'s 13, 14 and 15) for minimum DC voltage, then repeat the adjustment.
12. Change the service generator and the instrument to Channel 18. Adjust *CH18 Sec/Sgl/Pri* (parameter #'s 16, 17 and 18) for minimum DC voltage, then repeat the adjustment.
13. Change the service generator and the instrument to Channel 13. Adjust *CH13 Sec/Sgl/Pri* (parameter #'s 19, 20 and 21) for minimum DC voltage, then repeat the adjustment.
14. Change the service generator and the instrument to Channel 29. Adjust *CH29 Sec/Sgl/Pri* (parameter #'s 22, 23 and 24) for minimum DC voltage, then repeat the adjustment.
15. Change the service generator and the instrument to Channel 41. Adjust *CH41 Sec/Sgl/Pri* (parameter #'s 25, 26 and 27) for minimum DC voltage, then repeat the adjustment.
16. Change the service generator and the instrument to Channel 47. Adjust *CH47 Sec/Sgl/Pri* (parameter #'s 28, 29 and 30) for minimum DC voltage, then repeat the adjustment.
17. Change the service generator and the instrument to Channel 50. Adjust *CH50 Sec/Sgl/Pri* (parameter #'s 31, 32 and 33) for minimum DC voltage, then repeat the adjustment.
18. Change the service generator and the instrument to

ALIGNMENT PROCEDURES (Continued)

Channel 51. Adjust *CH51 Sec/Sgl/Pri* (parameter #'s 34, 35 and 36) for minimum DC voltage, then repeat the adjustment.

19. Change the service generator and the instrument to Channel 57. Adjust *CH57 Sec/Sgl/Pri* (parameter #'s 37, 38 and 39) for minimum DC voltage, then repeat the adjustment.
20. Change the service generator and the instrument to Channel 68. Adjust *CH68 Sec/Sgl/Pri* (parameter #'s 40, 41 and 42) for minimum DC voltage, then repeat the adjustment.
21. Change the service generator and the instrument to Channel 76. Adjust *CH76 Sec/Sgl/Pri* (parameter #'s 43, 44 and 45) for minimum DC voltage, then repeat the adjustment.
22. Change the service generator and the instrument to Channel 93. Adjust *CH93 Sec/Sgl/Pri* (parameter #'s 46, 47 and 48) for minimum DC voltage, then repeat the adjustment.
23. Change the service generator and the instrument to Channel 110. Adjust *CH110 Sec/Sgl/Pri* (parameter #'s 49, 50 and 51) for minimum DC voltage, then repeat the adjustment.
24. Change the service generator and the instrument to Channel 120. Adjust *CH120 Sec/Sgl/Pri* (parameter #'s 52, 53 and 54) for minimum DC voltage, then repeat the adjustment.
25. Change the service generator and the instrument to Channel 125. Adjust *CH125 Sec/Sgl/Pri* (parameter #'s 55, 56 and 57) for minimum DC voltage, then repeat the adjustment.

CHASSIS PARAMETERS (Group 1)

IF APC Offset Alignment

Test Point:	TP2301 (AFT Out)	Main PCB
Adjust:	Parameter #3	Range: 0 - 31

1. Disconnect the RF source from the antenna connector.
2. Short TP150 (U2001 pin 11) to ground (tuner shield).
3. Connect the DC voltmeter between TP2301 and ground.
4. Adjust *IF APC Offset* (parameter #3) to the step which gives a reading closest to +3.8VDC.
5. Remove the short from TP150.

IF VCO Free Run Alignment

Test Point:	TP2301 (AFT Out)	Main PCB
Adjust:	Parameter #1	Range: 0 - 127

1. Disconnect the RF source from the antenna connector.
2. Short RF AGC (+ side of C2309) to ground (tuner shield).
3. Connect the sweep/marker generator to the IF input (SF2301 pin 1); use the tuner shield as ground reference. Set the generator for a 45.75MHz marker, 450mVrms.
4. Connect the DC voltmeter between TP2301 and ground.
5. Adjust *IF VCO Free Run* (parameter #1) to the step which gives a reading closest to +3.8VDC.
6. Remove the short from C2309.

4.5MHz Trap Alignment

The 4.5MHz trap is aligned at the factory and should not require realignment in the filed unless either the T-chip (U2001) or the EEprom (U3102) has been replaced. In this case, adjust *4.5MHz Trap* (parameter #2) to step 7.

Video Level Alignment

Test Point:	TP2303 (Video Out)	Main PCB
Adjust:	Parameter #4	Range: 0 - 7

1. Short pin 49 of U2001 to ground (tuner shield).
2. Tune the instrument to receive the color bar signal. With U2001-49 grounded, there will be no color in the display.
3. Connect a scope probe (500mV/20µsec/div.) to TP2303 (U2001 pin 56); use the tuner shield as ground reference.
4. Adjust *Video Level* (parameter #4) for 1.65Vp-p (±0.15Vp-p). Measure from sync tip to 77IRE white bar.
5. Remove the short from U2001-49.

FM Level Alignment

Test Point:	U2001-5 (WBA Out)	Main PCB
Adjust:	Parameter #5	Range: 0 - 31

1. Tune the instrument to receive 1kHz, L+R stereo audio from the MTS signal generator (PILOT off, SAP off).
2. Connect a scope probe (200mV/200µsec/div.) to U2001 pin 5; use the tuner shield as ground reference.
3. Measure the 1kHz envelope (not the carrier waveform) as shown in Figure 1. Adjust *FM Level* (parameter #5) to the step which gives a reading closest to 333mVp-p.

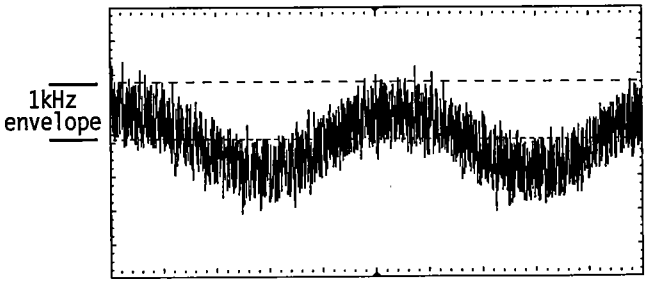


Fig. 1 - FM Level Alignment

RF AGC Alignment

Test Point:	C2309+ (RF AGC)	Main PCB
Adjust:	Parameter #6	Range: 0 - 63

1. Disconnect RF source from the antenna connector.
2. Connect the sweep/marker generator to the IF input

ALIGNMENT PROCEDURES (Continued)

(SF2301 pin 1); use SF2301 pin 2 as ground reference. Set the generator for a 45.75MHz marker, 450mVrms.

NOTE: Signal level must be set accurately. Measure the input signal level at SF2301 pin 1 with the signal connected. Signal level must be set to within ±1%.

NOTE: Signal leakage around the SAW filter will be a problem unless proper precautions are taken. The leads used to connect the signal source to SF2301 must be shielded to within 1/2" of the circuit board.

3. Connect the DC voltmeter across C2309.
4. Adjust *RF AGC* (parameter #6) to the step which gives a reading closest to +3.8VDC.

Factory Tint / Factory Contrast Reset Values

Adjust:	Parameter #11	Range: 0 - 127
	Parameter #12	Range: 0 - 127

These parameters set the values for tint and contrast that are used by the Reset Picture Controls feature in the Picture Quality menu. These values are set at the factory (*Tint* = 65; *Contrast* = 55) and should not be changed.

Blanking Reserve Alignment

Test Points:	KS5001-6 (Grn Out)	Kine PCB
	KS5001-8 (Red Out)	Kine PCB
	KS5001-11 (Blu Out)	Kine PCB
Adjust:	Parameter #13	Range: 0 - 3
	Parameter #14	Range: 0 - 3
	Parameter #15	Range: 0 - 3
	Parameter #16	Range: 0 - 127
	Parameter #17	Range: 0 - 127
	Parameter #18	Range: 0 - 127

1. Connect a jumper wire from pin 49 of U2001 to ground.
2. Tune the instrument to receive the color bar signal. With U2001-49 grounded, there will be no color in the display.
3. Preadjust *Sub-Bias* (parameter #'s 13, 14 and 15) to maximum (value = 3) and preadjust *Bias* (parameter #'s 16, 17 and 18) to minimum m (value = 0).
4. Connect a scope probe (10V/10µsec/div.) to the red output (KS5001-8); use the E5010 as ground reference.
5. Adjust *Red Bias* (parameter #16) for 5.0 volts (±2.0 volts) between sync tip and 0IRE (see Figure 2).

NOTE: If the target value is not attainable by adjusting parameter #16, then decrement *Red Sub-Bias* (parameter #13) one step and repeat step 5.

6. Reconnect the scope probe (10V/10µsec/div.) to the green output (KS5001-6); use E5010 as ground reference.
7. Adjust *Green Bias* (parameter #17) for 5.0 volts (±2.0 volts) between sync tip and 0IRE (see Figure 2).

NOTE: If the target value is not attainable by adjusting parameter #17, then decrement *Green Sub-Bias* (parameter #14) one step and repeat step 7.

8. Reconnect the scope probe (10V/10µsec/div.) to the blue output (KS5001-11); use the E5010 as ground reference.
9. Adjust *Blue Bias* (parameter #18) for 5.0 volts (±2.0 volts) between sync tip and 0IRE (see Figure 2).

NOTE: If the target value is not attainable by adjusting parameter #18, then decrement *Blue Sub-Bias* (parameter #15) one step and repeat step 9.

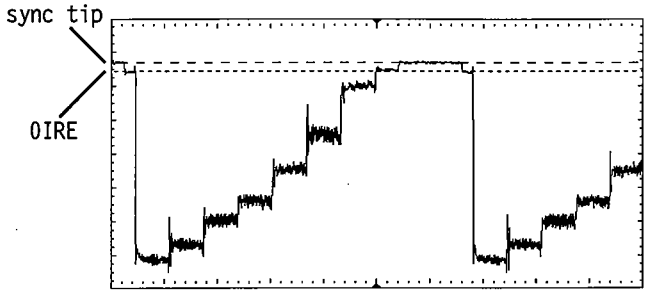


Fig. 2 - Blanking Reserve

Stereo VCO Alignment

Test Point:	TP132 (R Out)	Main PCB
Adjust:	Parameter #19	Range: 0 - 63

1. Desolder one end of R1609 (normally connected to JW244).
2. Disconnect the RF source from the antenna connector.
3. Select parameter #19 to route the VCO 4xfH signal to the pin 28 of the decoder (U1600).
4. Connect either the frequency counter or a scope probe (10mV/5.0µsec/div.) to TP132 (U1600 pin 28); use the tuner shield as ground reference.
5. Adjust *Stereo VCO* (parameter #19) to the step which gives a reading closest to 62.936kHz.
6. Reconnect R1609 for normal operation.

SAP VCO Alignment

Test Point:	Observe Display	
Adjust:	Parameter #20	Range: 0 - 15

1. Desolder one end of R1609 (normally connected to JW244).
2. Tune the instrument to receive the MTS stereo generator signal (1kHz, "L-R", SAP = ON).
3. Connect an audio generator (78.67kHz sine) to the loose end of R1609. Set signal level to 255mVrms (±10mVrms).
4. Preset *SAP VCO* (parameter #20) to "0".
5. Increment the value slowly (< 1 step/sec) until an asterisk (*) appears next to the value. Record this value as Va.
6. Preset *SAP VCO* (parameter #20) to "15".

ALIGNMENT PROCEDURES (Continued)

7. Decrement the value slowly (< 1 step/sec) until an asterisk (*) appears next to the value. Record this value as Vb.
8. Adjust *SAP Filter* (parameter #22) to equal (Vb - Va) /2.
9. Reconnect R1609 for normal operation.

Stereo Lowpass Filter

Test Point:	Observe Display	
Adjust:	Parameter #21	Range: 0 - 63

1. Desolder one end of R1609 (normally connected to JW244).
2. Tune the instrument to receive the MTS stereo generator signal (1kHz, "L+R", pilot = ON).
3. Connect an audio generator (9.4kHz sine) to the loose end of R1609. Set signal level to 1.04Vrms (±10mVrms).
4. Preset *Stereo Lowpass Filter* (parameter #21) to "0".
5. Increment the value slowly (< 1 step/sec) until an asterisk (*) appears next to the value. Record this value as Va.
6. Preset *Stereo Lowpass Filter* (parameter #21) to "63".
7. Decrement the value slowly (< 1 step/sec) until an asterisk (*) appears next to the value. Record this value as Vb.
8. Adjust *Stereo Lowpass Filter* (parameter #21) to equal (Vb - Va) /2.
9. Reconnect R1609 for normal operation.

SAP Filter Alignment

Test Point:	Observe Display	
Adjust:	Parameter #22	Range: 0 - 15

1. Desolder one end of R1609 (normally connected to JW244).
2. Tune the instrument to receive the MTS stereo generator signal (1kHz, "L-R", SAP = ON).
3. Connect an audio generator (88kHz sine) to the loose end of R1609. Set signal level to 206mVrms (±10mVrms).
4. Preset *SAP Filter* (parameter #22) to "0".
5. Increment the value slowly (< 1 step/sec) until an asterisk (*) appears next to the value. Record this value as Va.
6. Preset *SAP Filter* (parameter #22) to "15".
7. Decrement the value slowly (< 1 step/sec) until an asterisk (*) appears next to the value. Record this value as Vb.
8. Adjust *SAP Filter* (parameter #22) to equal (Vb - Va) /2.
9. Reconnect R1609 for normal operation.

Audio Separation Alignment

Test Point:	TP132 (R Out)	Main PCB
Adjust:	Parameter #23	Range: 0 - 63
	Parameter #24	Range: 0 - 63

1. Tune the instrument to receive the MTS stereo generator signal (1kHz, "L" only, pilot = ON).
2. Connect a scope probe (10mV/1.0msec/div.) to TP132 (U1600 pin 28); use the tuner shield as ground reference.
3. Change the MTS stereo generator signal to 300Hz.
4. Adjust *Wideband DBX* (parameter #23) to minimize the 300Hz envelope.
5. Change the MTS stereo generator signal to 3kHz.
6. Adjust *Spectral DBX* (parameter #24) to minimize the 3kHz envelope.

NOTE: There is some interaction between these two controls. Repeat steps 3 - 6 until no readjustment is required.

NOTE: *DO NOT* use any modulation frequency other than those specified above. If the specified frequency is not available, set the *Wideband DBX* and *Spectral DBX* parameters as follows:

Parameter: 23 Value: 31
Parameter: 24 Value: 35

D2PIP Picture Alignment

Test Point:	Observe Display	
Adjust:	Parameter #7	Range: 0 - 31
	Parameter #8	Range: 0 - 63
	Parameter #9	Range: 0 - 127
	Parameter #10	Range: 0 - 127

1. Connect a jumper wire from pin 49 of U2001 to ground.
2. Turn the PIP function on and tune the instrument to receive the color bar signal for both the main picture and PIP picture. With U2001-49 grounded, there will be no color in the display.
3. Viewing the far right (darkest) bar, adjust *D2PIP Brightness* (parameter #7) so that the brightness of the PIP picture matches the brightness of the main picture.
4. Viewing the far left (brightest) bar, adjust *D2PIP Contrast* (parameter #8) so that the brightness of the PIP picture matches the brightness of the main picture.
5. Remove the jumper wire.
6. Adjust *D2PIP Chroma Level* (parameter #9) so that the color level of the PIP picture matches the color level of the main picture.
7. Adjust *D2PIP Tint* (parameter #10) so that the tint of the PIP picture matches the tint of the main picture.

INSTRUMENT PARAMETERS (Group 0)

Regulated B+ Check

Test Point:	T4401 pin 8	Main PCB

NOTE: R4113 is factory sealed - *do not adjust.* Refer to **Replacement Parts** for kit information.

1. Tune the instrument to receive the color bar signal.

ALIGNMENT PROCEDURES (Continued)

2. Connect a DC voltmeter to pin 8 of T4401; use pin 3 of T4101 as ground reference. The DC voltage must meet the following limits:

CTC179BJ,BK	128VDC (± 0.1VDC)
CTC179CJ,CK,CM,DK	135VDC (± 0.1VDC)
CTC179DJ,DL	140VDC (± 0.1VDC)

Horizontal Phase Adjustment

Test Points:	TP130 (Luma)	Main PCB
	TP4704 (Horiz)	Main PCB
Adjust:	Parameter #4	Range: 0 - 15

1. Tune the instrument to receive the color bar signal.
2. Connect the CH1 scope probe (100mV/2µsec/div.) to TP130 (pin 46 of U2001); use the tuner shield as ground reference.
3. Connect the CH2 scope probe (100V/div.) to TP4704 (pin 5 of T4401).
4. Adjust *Horizontal Phase* (parameter #4) so that the time delay between the leading edge of horizontal sync (CH1) and the midpoint of the filament pulse (CH2) is 4.68µsec (± 0.5µsec), as shown in Figure 3.

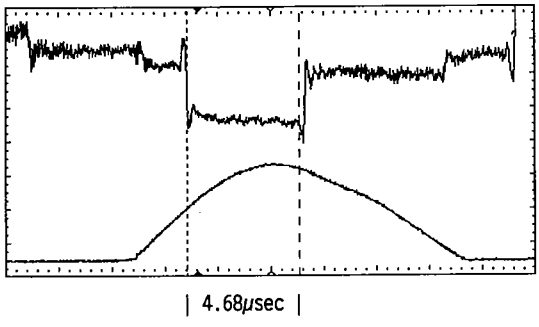


Fig. 3 - Horizontal Phase Adjust

Vertical Raster Adjustments

Test Point:	Observe Display	
Adjust:	Parameter #5	Range: 0 - 63
	Parameter #9	Range: 0 - 127
	Parameter #10	Range: 0 - 15
	Parameter #11	Range: 0 - 15

1. Tune the instrument to receive the crosshatch signal.
2. Preset the *Horizontal Centering* control (R4402) to mid-range. The *Horizontal Centering* switch (SW4401) must be either fully clockwise or fully counterclockwise.
3. Set the customer-accessible *Picture Tilt* controls (*Polarity* and *Strength*) for minimum tilt in the display.
4. Preadjust *Vertical Size* (parameter #9) so that the top and bottom edges of the display are just visible.
5. Viewing the top and bottom edges of the crosshatch, adjust *Vertical Centering* (parameter #5) to center the display vertically.
6. Viewing the topmost and bottommost *complete* blocks of the crosshatch, adjust *Vertical Linearity* (parameter #10) so that the blocks are the same height.
6. Viewing the topmost and centermost *complete* blocks of the crosshatch, adjust *Vertical S-Correction* (parameter #11) so that the blocks are the same height.
7. Adjust *Vertical Size* (parameter #9) so that ~3.75% of the crosshatch pattern is hidden at both the top and bottom of the display (7.5% overscan). Tolerance is ±5%.

EXAMPLE: If the crosshatch display has fourteen blocks vertically, adjust so that ~ 1/2 block is hidden at both the top and bottom of the display.

Horizontal Raster Adjustments

Test Point:	Observe Display	
Adjust:	Parameter #6	Range: 0 - 31
	Parameter #7	Range: 0 - 15
	Parameter #8	Range: 0 - 15
	Parameter #12	Range: 0 - 7
	Parameter #13	Range: 0 - 7
	R4402 (H. Center)	Main PCB
	SW4401 (H. Center)	Main PCB

1. Tune the instrument to receive the crosshatch signal.
2. Preset the *Horizontal Centering* control (R4402) and the *Horizontal Centering* switch (SW4401) fully counterclockwise.
3. Set the customer-accessible *Picture Tilt* controls (*Polarity* and *Strength*) for minimum tilt in the display.
4. Preadjust *Horizontal Size* (parameter #6) so that the left and right edges of the display are just visible.
5. Viewing the left and right edges of the display, adjust the *Horizontal Centering* control (R4402) and the *Horizontal Centering* switch (SW4401) to center the display horizontally.

NOTE: Although SW4401 is constructed like a rotary control, it functions as a switch, and must be set either fully CW or CCW.

6. Adjust *Horizontal Size* (parameter #6) so that ~3.75% of the crosshatch pattern is hidden at both the left and right edges of the display (7.5% overscan). Tolerance is ±5%.

EXAMPLE: If the crosshatch display has fourteen blocks horizontally, adjust so that ~ 1/2 block is hidden at both the left and right edges of the display.

7. Adjust *Pincushion Amplitude* (parameter #7) for straight vertical crosshatch lines at the left and right edges of the display. *Look only at the middle section of these lines at this time.* The top and bottom ends of the lines will be adjusted in the following steps.
8. Viewing the bottom left and right corners of the display, adjust *Pincushion Bottom Corner* (parameter #12) for straight vertical lines.
9. Viewing the top left and right corners of the display, adjust *Pincushion Top Corner* (parameter #13) for straight vertical lines.

ALIGNMENT PROCEDURES (Continued)

10. Viewing the left and right edges of the display, adjust *Pincushion Tilt* (parameter #8) so that the vertical crosshatch lines are parallel to the sides of the picture tube mask.

Screen Adjustment

Test Point:	Observe Display	
Adjust:	Screen control	Main PCB

1. Tune the instrument to receive the crosshatch signal.
2. Preset the *Screen* control fully CCW.
3. Enter the service menu and select parameter #14 (group 0); this enables the Screen Adjust Mode. The display should blank (except for the service menu).
4. Slowly turn the *Screen* control clockwise until the display reappears, then stabilizes (does not blink).

NOTE: There is a narrow range of the *Screen* control in which a stable display will appear. If the control is adjusted too far CW, the display will again blank, and a slick raster or retrace lines may appear.

Focus Adjustment

Test Point:	Observe Display	
Adjust:	Focus Control(s)	Main PCB

1. Tune the instrument to receive the crosshatch signal.

For Instruments With One Focus Control:

2. Adjust the *Focus* control for best overall focus.

For Instruments With Two Focus Controls:

3. Adjust the lower *Focus* control for best focus at the center of the display.
4. Adjust the upper *Focus* control for best focus at the corners of the display.
5. Repeat steps 3 and 4 for best overall focus.

Color Temperature Adjustment

Test Point:	Observe Display	
Adjust:	Parameter #14 - 16	Range: 0 - 127
	Parameter #17 - 19	Range: 0 - 63
	Parameter #20 - 22	Range: 0 - 3

1. Connect a jumper wire from pin 49 of U2001 to ground.
2. Tune the instrument to receive the color bar signal. With U2001-49 grounded, there will be no color in the display.
3. Viewing the 15IRE gray bar (second from right in the display), adjust *Red Bias*, *Blue Bias*, and *Green Bias* (parameter #'s 14, 15 and 16) for proper low-level white balance. The 7.5IRE bar (far right in the display) must remain black.

NOTE: The display may be blinking when parameter #14 is selected, due to the fact that the signal is not the same one used to set the *Screen* control. *Do not* readjust the *Screen* control.

NOTE: There is a slight delay before a change in *Bias* takes effect. When making adjustments to these parameters, do so slowly - one increment at a time.

NOTE: In the event that one or more of the *Bias* parameters cannot be set, increment the corresponding *Sub Bias* (parameter #'s 20, 21 and 22), then readjust the *Bias* parameter. These parameters have a very large effect on the display; adjust only if absolutely necessary.

4. Viewing the 77IRE bar (far left in the display), adjust *Red Drive*, *Green Drive* and *Blue Drive* (parameter #'s 16, 17 and 18) for proper high-level white balance.
5. Check the entire display for proper color temperature tracking. If necessary, readjust the *Bias* and *Drive* parameters.
6. Tune the instrument to receive the crosshatch signal. Select parameter #14 and check for a stable display. If display is blanked or blinking, the *Screen* control is misadjusted. Repeat **Screen Adjustment** and **Color Temperature Adjustment** procedures.

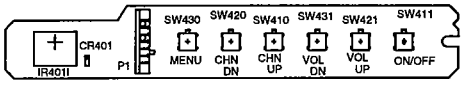
High Voltage Check

High voltage for this chassis is *not* adjustable. To check high voltage, connect the positive lead of a voltmeter (using a high voltage probe) to the picture tube anode. Connect the negative lead to the picture tube ground strap. The meter used for measuring high voltage must have an impedance of 1000 Mohm or more and be accurate within 5%.

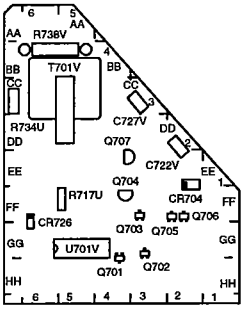
Nominal high voltage (at maximum beam current) for this chassis is 29.0kV (for 27" instruments), 32.0kV (for 32"/35" instruments).

CAUTION: Because some instruments operate at a very high anode voltage, the anode cup is sealed at the factory. Measuring the anode voltage compromises the integrity of the seal; therefore, if high voltage is checked, the servicer must replace and reseal the anode connector. Refer to **Replacement Parts** for stock number(s).

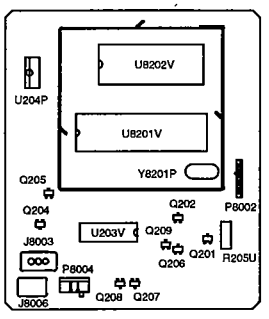
CHASSIS LAYOUT



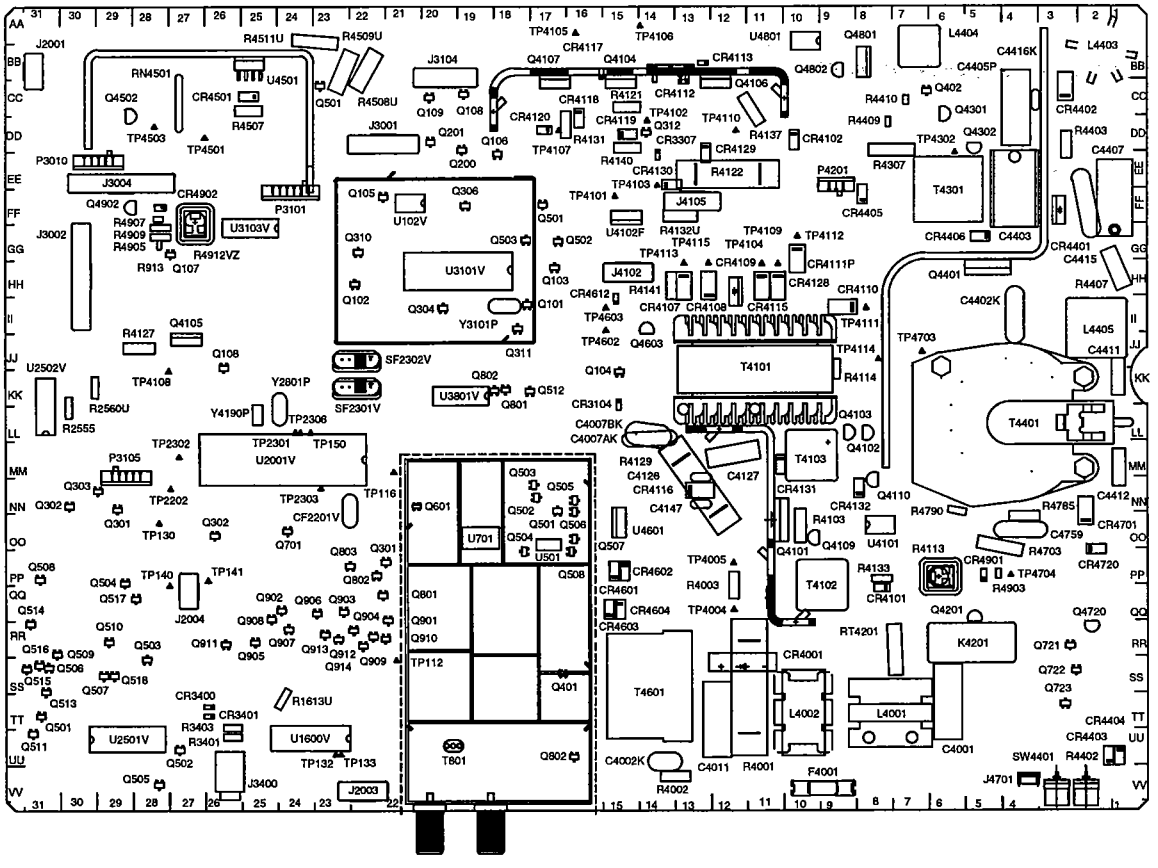
Front Panel PCB



Dynamic Focus PCB

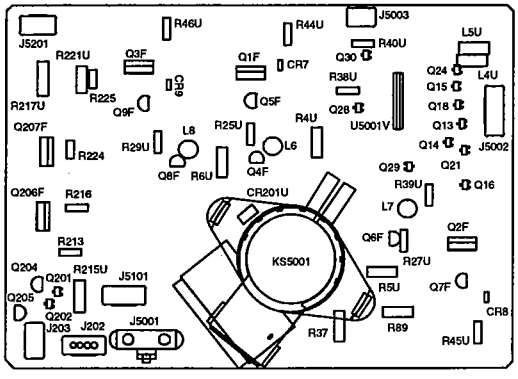


Pix-In-Pix (D2PIP) PCB

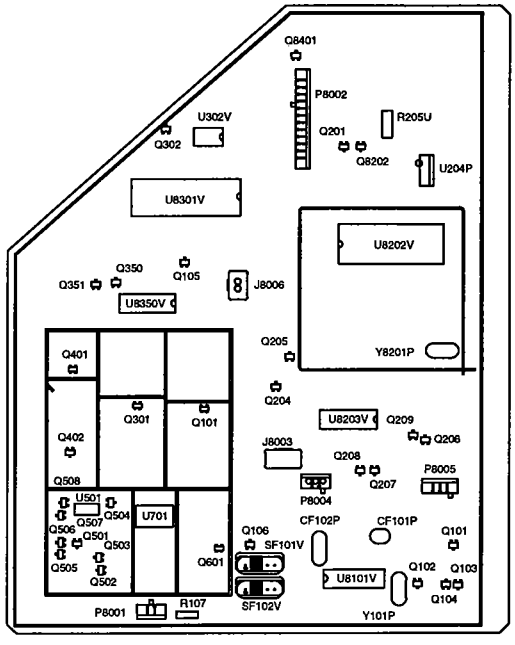


Main PCB

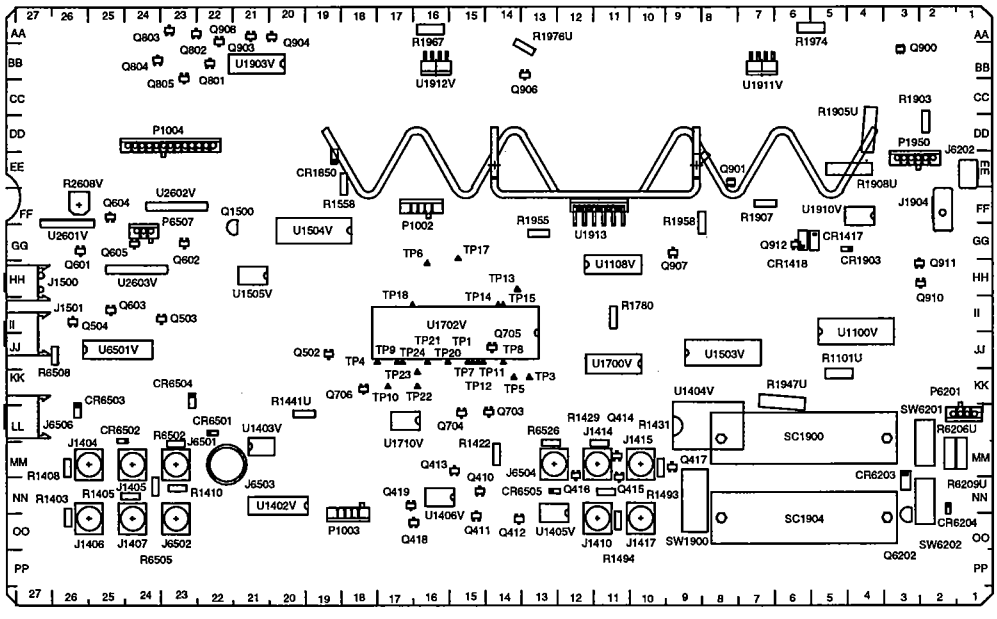
CHASSIS LAYOUT (Continued)



CRT Driver PCB



Pix-In-Pix (D2T2PIP) PCB



In/Out PCB

CIRCUIT OVERVIEW

Main Power Supply

The main power supply in the CTC179 chassis is a current mode pulse-width-modulated (PWM) switching supply. The switching action of Q4101 in the primary of T4101 induces voltage into the secondaries. These voltages are rectified and filtered to produce seven secondary supplies: +135V, +33V, +26V, +26V2, +18V, and -18V.

Power Supply Start-up

The rectified voltage from CR4001 is filtered by C4006 to produce approximately 150 volts DC raw B+. The raw B+ is applied to the collector of Q4101 through the primary of T4101. At the same time, standby +20V from CR4106 is applied the emitter of Q4102. A HI from the system control circuitry is applied to the base of Q4103, turning it on which turns on Q4102. This passes the +20V standby voltage to pin 7 of U4101 providing the necessary VCC to operate the IC. When the supply is up and running, a +26V run supply from CR4111 reverse biases CR4106 and takes over supplying power to the IC.

When the IC receives sufficient power, the internal oscillator begins to run at a frequency determined by the value of R4110 and C4105. Approximately 26 V peak square wave 15.750 KHz gate drive pulses are output at pin 6 and drive Q4110. Once the horizontal circuitry begins running, pulses from the flyback transformer are capacitively coupled to pin 4 to synchronize the power with deflection to prevent noise beats in the picture. The drive pulses are coupled across T4103. The resulting pulses on the secondary of T4103 drive the base of Q4109 which in turn drives Q4101. The pulsed DC in the primary of T4101 induces voltage into the secondaries, producing the seven original supplies mentioned earlier.

The soft start circuit comprising C4106 and CR4103 prevents the power supply from starting a maximum duty cycle. When the supply first starts, the output of the error amplifier is shunted from pin 1 through CR4103 to C4106. As the power supply comes up, C4106 charges turning off CR4103. This permits the output of the error amplifier to ramp up slowly allowing the power supply to start softly.

Power Supply Regulation

The output of the PWM supply is controlled by varying the duty cycle of Q4101's drive pulses. The duty cycle is determined by the amount of current drawn from the supply. R4101 is a current resistor connected to the emitter of Q4101. The voltage across the resistor is proportional to the current through Q4101. The current sense voltage is coupled across T4102, filtered by C4102, rectified by CR4101 and applied to pin 3 of U4101. The PWM controller logic begins each output pulse as timed by the oscillator circuit. The pulse ends when the current sense input equals the output of the error amplifier.

The error amplifier feedback is obtained from the rectified +135V secondary supply off of pin 1 of T4101. The voltage is divided down and applied to the error amplifier at pin 2 of U4101 from the wiper of R4113.

When the load on the secondaries of T4101 increases, the output voltage on the secondaries drops. The error amplifier detects the decrease in feedback voltage and raises the error output voltage. The turn-on time of Q4101 is timed to the oscillator. The turn-off time occurs when the current sense input equals the error voltage. Because the error voltage has increased, Q4101 must remain on longer for the current sense voltage to reach the error voltage. Q4101 stays on longer transferring more energy to the secondaries, raising the output supplies back to the correct level. The output voltage is adjusted at the factory with R4113.

The network comprising C4127, C4126, C4147, CR4116 and R4129 is called a "snubber" network. The snubber network reduces the power dissipation of Q4101 by shifting current away from it during turn-off.

Overcurrent Protection

The current sense pin at U4101 pin 3 is also used to detect overcurrent conditions in the power supply. If the current sense voltage rises above approximately 1 volt (indicating an overcurrent condition), the PWM control logic stops the output of the gate drive pulse at U4101 pin 6. The power supply will then pulse on and off at approximately 1/2 second intervals until the overcurrent condition is eliminated.

Hot/Cold Isolation

The power supply also provides hot/cold chassis isolation. T4101, T4102 and T4103 provide electrical isolation. Components connected to the primary of T4101 and the secondaries of T4102 and T4103, are referenced to HOT ground. The secondary of T4101 and the primaries of T4102 and T4103 are referenced to cold ground. Care should be taken to reference the correct ground when taking measurements.

Horizontal Deflection

The horizontal deflection circuitry is responsible for generating a current ramp through the horizontal windings of the yoke to deflect the electron beam from left to right. In addition, the horizontal output circuitry generates the high voltage necessary to bias the CRT.

U2001 (T2-Chip) performs low level horizontal processing. The functions performed in U1001 are very similar to previous chassis such as the CTC149. The difference is the functions are controlled via the serial data bus. The horizontal processing circuits contained in U2001 are the; Horizontal Automatic Frequency Control (AFC), Horizontal Automatic Phase Control (APC), Horizontal Drive, East West (EW) Pincushion Correction, X-ray Protection and the Horizontal Vcc Standby Regulator

The horizontal drive and output circuits are conventional in design. The horizontal drive section of U2001 is similar to the CTC149. The output at pin 26 is an open collector that is low (on) when horizontal drive is on. The pulse width is adjustable from 32msec to 36msec via serial bus commands to T2-Chip register H. Duty (Horizontal Duty). This is set at the factory and is not adjustable in the field.

Q4301 is the horizontal drive buffer that capacitively couples the drive signal to the horizontal driver Q4302. Q4302 drives the primary of T4301, the horizontal drive transformer, to provide the current step-up needed to produce about 1 amp of base drive to the horizontal output transistor, Q4401.

CIRCUIT OVERVIEW (Continued)

The collector of Q4401 is connected to pins 10 and 11 of T4401, the IHVT. The 135 volt B+ is input on pin 8 and the horizontal yoke is connected to pin 12 of T4401. The switching action of Q4401 will cause the yoke and retrace capacitor, C4402, to resonate creating a 1000 Vp-p retrace pulse. The retrace pulse induces a voltage in the secondary of the IHVT to create the high voltage and scan derived power supplies. The electron beam is scanned across the screen by the resulting current sawtooth through the yoke.

CR4401 and C4403 are the damper diode and retrace capacitor. CR4402 is the pin damper that provides a virtual ground to permit the pincushion circuit to modulate the current in the horizontal yoke. CR4403, CR4404, R4402 and SW4401 provide horizontal centering control of the raster by producing a small DC offset voltage. The magnitude and polarity of the offset is controlled by R4402 and SW4402.

The only scan derived supplies currently supplied by the IHVT are the +250V supply for biasing the CRT cathodes and the 30kV plus high voltage for the second anode and focus grids.

Horizontal AFC and APC

The purpose of the AFC and APC is to maintain proper synchronization between horizontal scan and the incoming sync signal. The T2-Chip employs a "two-loop" approach to accomplish this task. The first loop is the AFC and second loop is the APC.

The AFC phase locks the horizontal oscillator to the incoming sync signal. The APC locks the phase of the horizontal output to the phase of the horizontal oscillator. The external circuit at pin 25 of U1001 is the loop filter for the phase lock loop (PLL) and is used to optimize the frequency response of the AFC loop.

The APC loop is used to track out the phase errors due to variable delays in the horizontal driver and output circuit. The APC has a two bit register (APC Gain) that controls the gain of the APC loop. APC Gain like AFC Gain is preset at the factory and cannot be adjusted by the service technician. The reference signal for this loop is a flyback pulse applied to an RC network and input to U2001 pin 27.

Unlike the CTC177 circuitry, the horizontal frequency is NOT adjustable on the CTC179 chassis.

U2001 provides a sandcastle signal at pin 29 that contains horizontal and vertical synchronization signals used by the PIP circuits.

Vertical Deflection

The vertical circuit in the CTC179 is very similar to the CTC177 vertical circuit. Like the CTC177, the vertical circuit is a direct DC coupled amplifier instead of capacitively AC coupled. The "S" correction is accomplished inside the LA7615 T2-chip, U2001. Because of DC coupling, the DC level of the vertical reference ramp from U2001 pin 19 affects vertical centering. This provides a Vertical DC (vertical centering), to be included in the digital alignments. It compensates for tolerances in the reference ramp DC voltage.

The vertical circuit acts as a voltage to current converter. U4501 is an inverting amplifier that sinks current at pin 5 when pin 1 is high and sources current from pin 5 when pin 1 is low. U4501 is supplied by the 26 volt run source from the main power supply. The low side of the yoke connects to a "half supply" (approximately half of the 26 volt supply). R4510 adjusts the circuit for different screen sizes . C4502 is used as a filter and with R4518 helps reduce the vertical rate ripple current on the "half supply." Pin 19 of U1001 provides the vertical sawtooth to pins 1 and 2 of RN4501.

When the vertical ramp is at the bottom of the slope, pin 5 of U4501 sources current from the 26 volt supply through the yoke to the 14 volt "half supply" deflecting the electron beam to the top of the screen. As the ramp climbs in voltage on pin 1, the current source from pin 5 proportionally decreases lowering the voltage across the yoke, deflecting the beam towards the center of the screen. As the voltage on pin 1 of U4501 rises higher than pin 7, pin 5 begins to sink current. This causes the current to flow from the 13 volt "half supply," through the yoke to pin 5. Because the current flow reverses, the beam is deflected towards the bottom of the screen. During retrace, the ramp resets causing pin 5 of U4501 to go high, deflecting the beam back up to the top of the screen. The extra current required to deflect the beam from the bottom to the top of the screen is produced by C4505.

Dynamic Focus

Certain versions of the CTC179 chassis have a dynamic focus circuit to optimize the corner focus of CRT's larger than 27". The dynamic focus circuit accomplishes this by modulating or "varying" the focus voltage to the CRT with a horizontal sawtooth and a vertical parabola signal. The circuitry can be divided into horizontal and vertical sections. Each section obtains its signal from the respective horizontal and vertical yoke.

The horizontal circuitry is very similar to that used in the CTC169 chassis. The low side of the horizontal yoke passes through R4738. The voltage across the resistor is also across the primary of T4701. The output on the secondary is combined with the parabola from the vertical circuitry.

The vertical circuitry samples a voltage across R4519 on the low side of the vertical deflection yoke. This voltage appears at ESENS 2. The same voltage appears at ESENS 1 with the vertical ramp voltage added to it. The ESENS 2 signal is applied to the inverting input of the op amp at U4701 pin 6. The op amp sets the DC value to 6.8V and inverts the signal. ESENS 1 is applied to the inverting input of the op amp at U4701 pin 2. This sets the DC average of the ESENS 1 signal to 6.8V, adds the inverted ESENS 2 signal to it and multiplies the difference by 5. The resulting vertical ramp signal is output at U4701 pin 7.

This signal is input to the inverting input of the op amp at U4701 pin 13 which inverts the ramp. CR4720, CR4721 and the clamp transistor Q4701 combine the negative portions of the ramp and inverted ramp that are below 6.2V. The signal on the emitter of Q4702 is applied to a dual darlington differential amplifier composed of Q4703, Q4704, Q4705 and Q4706. The amplified signal is then passed to Q4707 which generates a 225 Vp-p ramp signal that is combined with the horizontal signal and sent to the focus block.

Pincushion Correction

The electron beam scanning the face of the CRT must travel further to the corners than it does to the edges. If not

CIRCUIT OVERVIEW (Continued)

corrected, the picture would have an hourglass shape called pincushion distortion. The pincushion correction circuit modulates the horizontal yoke current at a vertical rate to correct the distortion.

U2001 produces a vertical rate parabola at pin 21 that drives the pincushion correction circuitry. This output has bus controlled DC and AC components which are aligned with the serial bus. The DC register is controlled by a four bit register, E-W DC. This is used to align raster width. The AC component is controlled by a three bit register, E-W Amplitude. This controls the amount of pin or barrel distortion in the raster.

The vertical parabola from pin 21 of U2001 is combined with a filament pulse at pin 2 of U4801. The DC reference for the inverting input on pin 3 of U4801 is set to approximately 4.3 volts by the divider composed of R4806 and R4807. U4801 turns on Q4801 at the horizontal rate while the amplitude of the signal is modulated at the vertical rate. C4408 is connected to the low side of the horizontal yoke . When Q4801 is on, current is pulled from the horizontal yoke, through L4404 to ground through the drain-source junction of Q4801. This lowers the voltage on C4408 increasing the current flow through the horizontal yoke. Increased current flow through the yoke will cause the raster to be wider. In this way, the current through the yoke is modulated to correct for pincushion distortion.

When Q4801 turns off, the energy stored in L4404 is released. This voltage is dumped to the +135 volt supply when it is high enough to forward bias CR4405. This prevents excessive voltage from damaging Q4801. R4793 is connected to the HVSTART terminal of the flyback to allow the pincushion circuit to perform size tracking with beam load variations.

Video Signal Processing Circuitry

The video signal processing circuitry is responsible for receiving video signals from either the A/V jacks on the front and back of the set or from the PIP or main chassis tuners. The CTC179 chassis supports three composite video inputs and one S-Video input. U6501 is an I2C bus controlled switch that routes composite video to the analog comb filter, U2601 pin 1. This signal is used for the big pix and a sample is also output to the selected video out. PIP tuner video and TV tuner video are input to pins 11 and 10 of U6501. PIP tuner video is always used for the small pix and TV tuner video is always used for the big pix.

Separated luma and chroma are output at pins 7 and 8 respectively and sent to U2603 and U2602, the luma and chroma switches. These switches select either combed luma and chroma from composite video sources or luma and chroma from the S-Video connector. Selected luma and chroma from U2603 and U2602 are output at pin 8 of both IC's and sent to the PIP circuitry for processing.

Selected small pix video from U6501 pin 18 is input to the PIP assembly at P8005-4. Big pix luma and chroma are input at J8003 pins 3 and 1 respectively. The video processed by the PIP circuitry is output as luma and chroma at P8004 pin 1 and pin 3. Luminance is sent to the video features IC U2501. This IC performs edge replacement to sharpen edge transitions in the luminance. It also develops a second derivative of the luminance that is sent to the scan velocity modulation (SVM) circuitry on the kine socket board. Edge replaced luminance is output from U2501 pin 15 and sent to the T2-Chip, U2001 pin 50. Chroma from the PIP circuitry is output from P8004 pin 3 and sent to the T2-Chip, U2001 pin 51.

Video / Audio IF

The video and audio IF circuitry in the CTC179 chassis is very similar to the CTC177/187 chassis circuitry. Noticeable changes to the IF circuitry include the addition of a separate SIF (sound IF) and FM detection circuitry. A separate 41.25 MHz sound IF from the tuner is input to U2001 pin 12. The tuned SIF loops out at pin 59 and passes through a 4.5MHz band pass filter reenters at pin 61. The FM detector produces wide band audio out at pin 5. This signal is sent to the stereo decoder (U1600).

The 45.75MHz picture IF signal from the tuner passes through the PIF SAW filter and is input to pins 10 and 11 of U2001. Baseband video is detected and sent to black and white noise inverters and then output as composite video at 56. This signal is sent to the I/O board as the TV tuner video source.

AFT operation is accomplished by a digital frequency counter inside U2001 that sends data to U3101 over the serial data bus. Because it is an actual frequency counter, there is no need for an AFT alignment coil. A sample of the detected video signal controls both RF and IF AGC. RF AGC is adjustable via the service menu like the other alignments. Pin 4 of U2001 will sink current or let the pull-up supply source current to the tuner. The voltage increases to increase the gain of the tuner and decreases to reduce the gain of the tuner.

Luminance Processing

Processed luminance from the edge replacement / svm circuitry (U2501) is input to pin 50 of U2001. The luminance is then passed through filtering and coring and applied to an internal black stretch circuit. The voltage on pin 43 must be approximately 1.5 volts or greater to enable luminance. Luma is then input to the internal/external switch which selects between OSD and video. R-Y and B-Y from the internal chroma circuitry is also applied to this switch. OSD from U3101 is applied to pins 40, 41 and 42. These are the red, green and blue OSD inputs. The fast switch input at pin 39 controls whether OSD or video is switched out: HI (>2.5V) = External Video (OSD) or LO (<2.5V) = Internal Video.

The output of the Internal/External switch produces Y, R-Y and B-Y. The three signals are sent through their respective contrast and clamp controls. These stages are controlled over the serial bus. The luminance is sent to the brightness control while the component chroma signals are matrixed and then summed with the luminance. The summed red, green and blue signals are then sent to the RGB processing circuitry. The RGB circuitry in U2001 is used to adjust the red, green and blue drives for the CRT. The bias controls are set at fixed values at the factory and are not adjustable with the service menu. Buffered red, green and blue signals are output at pins 36, 37 and 38 respectively and sent to the kine drive circuits. The beam sense input is at pin 31 and is used to reduce brightness and contrast during high beam current scenes to keep the CRT from "doming." The circuit is active below 6.2 volts.

CIRCUIT OVERVIEW (Continued)

AKB

AKB will allow the setup of a tube once and from there automatic adjustment of the bias will take place on every field of video information during the vertical blanking interval. In theory, at least, the color temperature of the CRT will remain constant as long as the AKB circuitry is not compromised. All three guns are independently adjusted and with a range from 0 to 7.5 milliamps (the expected minimum and maximum beam current,) AKB will be able to compensate for any temperature (DC bias) drift in any of the three guns for the life of the tube.

Only the red cathode driver will be used for this discussion. The green and blue circuitry is identical as is all circuit operation. Q5004 and Q5005 form a class AB (push-pull) amplifier for the video. They are the direct cathode drivers. R5010 is the current sense resistor

Shortly after vertical blanking ends but before signal video begins, the AKB pulse sources a current to Q5001, the cathode class A driver, causing beam current to flow. This current consists of a constant current known as I sample and the variable current known as I adjust. Enough current is sourced to Q5001 to ensure 33 μamps of cathode current is drawn. 33 μamps is used to make certain that some beam current is drawn and is analogous to manually adjusting the old screen control until the setup line just "barely" appeared. That current goes through the 120KW, R5010 which generates a voltage drop that is sent back to the AKB IC through buffer Q5028. There is a resistor and zener diode in parallel with the sense resistor to channel any over voltage condition. Since the CRT can draw as high as 7.5 milliamps, that current and more could flow through the sense resistor dropping as much as 900 volts!

The zener will begin shunting excess current to ground through a resistor at about 7 volts during active video. Since normal cutoff bias for the tube will occur at around 3-4 volts and AKB only samples during blanking, bypassing all voltage above 7 will not affect the AKB adjustment. All video is shut off during the AKB period so that nothing is on the cathodes except the DC bias voltages.

The incoming voltage from the sense resistor is compared by the VCCS (Voltage Controlled Current Source) to a 3.3 volt reference source during the AKB sampling time. Any error between the incoming voltage and the reference is coupled to the variable I adjust current source. Notice that R5010 will need to drop 4.0 volts to balance the VCCS. R5010 is 120K resulting in 33.3 milliamps of beam current. Since there is a buffer transistor between R5010 and the AKB IC, pin 15 will see approximately 3.3 volts. The VCCS will then cause I adjust to source more or less current to Q5001 as needed to bring the input sense pin to 3.3 volts, maintaining the cathode current at 33 milliamps.

During AKB sampling, the VCCS is a low impedance current source for the R filter on pin 13. During non-AKB time, it becomes high-impedance to maintain the charge it just placed on the filter capacitor. The current from the VCCS drives the Red filter to a voltage level which is maintained during and between the AKB sampling period. The capacitor value is high enough to assure no extreme bias swings can occur in a short amount of time. Adjustments are incremental, but occur on every vertical blanking pulse. The current source "I Sample" provides a small *constant* current only during the AKB adjustment time. Since the "I Adjust" current is attempting to provide enough cathode bias for 33 milliamps, this means that beam current must be drawn for proper operation. "I Adjust" and "I Sample" together form this bias current. The small "I Sample" current is removed during video signal operation leaving only "I Adjust" during active video. This assures that "I Adjust" will then be very close to the exact beam current cutoff.

Q5001 is a class A video amplifier driving the cathode transistors, Q5004 and Q5005. Since the current flow through this transistor may be relatively high, it is mounted on a heat sink. Q5018 buffers the T2 chip video output to the cathode driver, Q5001. Q5013 supplies a constant voltage to Q5018 to stabilize its gain. The AKB current output adds to the video current drive at the emitter of Q5001 in much the same way video rode on the DC bias set by the bias pots on prior sets. The incoming blanking pulse and the cathodes know exactly what that voltage is. AKB's function is to set the CRT cathode bias properly at the beam current cutoff and maintain that cutoff, regardless of the voltage needed, over the life of the set.

Pix-In-Pix (D2T2PIP)

The D2PIP module is used in the D2PIP and performs all processing for the small pix internally. The D2PIP accepts only composite video and outputs the small signal in Y/C form. Adjustments are available via the service menu to control brightness level, color, tint and contrast. Video switching to place the small pix in the main pix occurs in a separate IC, U8203, known as the fast switch. The main pix Y/C signal is fed directly to the switch along with the small pix Y/C output from the D2PIP module. A data bus from the PIP to the main microprocessor controls where the small pix will be placed within the main picture. There is a separate D2PIP Control, U8301, to control the PIP tuner.

The sandcastle signal from the T2 chip is used to provide horizontal and vertical sync plus chroma burst for timing within the PIP module and between the D2PIP module and D2PIP Control. If it is lost, the PIP module will not function, however the main picture will be unaffected.

Scan Velocity Modulation (SVM)

Only the luminance signal is sampled for SVM. This is because resolution of color detail by the human eye is not very acute. Edge detail is almost exclusively perceived by the black and white detail of an image. The edge replacement from the Luma Processor, IC2501, outputs a differentiated signal that produces preshoots and overshoots at any black/white transition. This signal is first buffered by class A amplifier Q5201. The signal then goes through a high-pass filter, Q5202 and on to the push-pull pre-drivers, Q5204 and Q5205.

Yoke current is constantly rising from left to right. The SVM current bucks the deflection yoke current during white portions of the picture. This makes the scan beam slow down. During dark portions of the picture, SVM yoke voltage assists deflection yoke voltage speeding the deflection beam up. The length of time for the total scan remains the same but the speed of the scan has changed during the interval. During normal signals, SVM yoke voltage is minimal. Yoke current is directly controlled by the output drivers Q5206 & Q5207 and can reach a maximum of 1.5 amps.

CIRCUIT OVERVIEW (Continued)

The SVM control signal is blanked during the width of any OSD characters, but not the entire OSD area. This prevents modulation of the characters by the SVM during high frequency luminance video that might trigger the SVM coil. It is also muted during the PIP window. If there is a great deal of high-frequency luminance material the SVM heat dissipation could be excessive. One condition that could cause this would be static from a loss of signal condition. Since SVM is attempting to sharpen only high frequency luminance the static particles would represent a worst case condition to it.

Audio

The user desired audio input request is sent by the SYSCON to U1402 via the I²C bus. The proper audio is then selected from the various inputs. 2nd tuner and front A/V jack audio come in as mono signals and are fed to the respective right and left inputs of the IC. Since 2nd tuner audio is mono only, when the PIP signal is swapped from the small pix to the main pix, the tuners are swapped to provide a stereo output of the PIP-selected channel. Main tuner audio comes from U1500, the stereo decoder, and is fed in as right and left signals. U1402 outputs three line level dual-channel signals from the selected input, two of which are used. The first goes to the headphone T/V/B which has its own tone, volume and balance controls, then to an amplifier and on to the headphone jack. The second feeds the Select Output jacks, the SRS or XS Stereo chip, whichever is present, and U1503, the main tone/balance/volume control chip. U1503 can select between 4 inputs and provides a line level volume-controlled output after processing, that directly drives the power output devices.

Signal flow in the audio system is straightforward except for the SRS. Only the left channel will be discussed. The right channel is identical. U1402 is the input select switch and is controlled by the I²C bus. The selected input is buffered and a line level output signal sent to pin 10 and 14. Pin 14 is the headphone signal feed. U1504 accepts the input at pin 18, then outputs it to pin 27, then on to the headphone amplifier. Pin 10 is connected to the line level output jacks to provide a fixed level signal for connection to external power amplifiers which have volume control capabilities. It also is connected to the main TVB, U1503 at pin 14 and the SRS processor, U1702. The SRS processor manipulates the incoming stereo signal through various delay and phase shift components and supplies the resulting signals to U1503.

U1503 is the main Tone/Volume/Balance and mode select switch and is I²C bus controlled. Once the input selection is made, it is passed through the signal processing circuits and output to pin 27 as a volume-controlled line level signal. This signal is connected to the Hi-Fi Output jacks for connection to external power amplifiers that need volume-controlled output, and to the internal amplifiers. The TVB also has two digital output signals selected by the I²C bus. The digital signal from pin 3 is high when the user has turned off the internal speakers from the menu selection. The other digital signal from pin 8 is high only when the set shuts down or comes on. It is used to mute the line level Select or Hi-Fi outputs to prevent audible thumps as the power supplies are coming up or going down.

The power amplifier on the CTC179 is 5 watts total in a two channel module. It accepts the line level signal from U1503 on pin 5 and amplifies it to speaker level for output from pin 8 to the speaker switch and finally the internal or external speakers. The amplifier output will be muted as long as pin 3 is less than 12 volts. The CTC179 will use the 5 Watt dual channel amplifier.

Automatic Volume Reduction lowers the line-level signal to the output amplifiers during possible overcurrent conditions that may damage the output device. U1910 is an op-amp with one input leg tied to a +3.1 volt reference. As long as the average output voltage of the power amplifier swings around 0 volts, the output of U1910 is +4.8 volts. As the average speaker level monitored at pin 6 gets closer to the +3.1 volt reference at pin 5, the output at pin 1 goes lower. When it reaches +4.0 volts, System Control, U3101 tells U1503, the main T/V/B, to lower the volume level in 1.25 db steps every 100 milliseconds until the voltage at pin 6 of U1910 decreases enough to raise the output back above +4.0 volts. System Control will then increase the volume at U1503 1.25 db every 5 seconds until the menu selected volume is restored. During the volume decrease and restoration, the OSD will continue to show the menu selected volume. Only the actual signal level will be reduced and increased. Operation is completely transparent to the consumer.

Tuner

The CTC179 tuner is very similar to the CTC177/187 tuner. The tuner is manufactured on the main circuit board with the rest of the TV circuitry. The PIP circuit contains a tuner identical to the main chassis tuner that is also a "tuner-on-board". Although only the main chassis tuning system will be discussed here, the PIP tuning system is identical.

When a channel is selected, U3101 sends clock and data information to U501 telling it what band and frequency to synthesize. The output of pins 1 and 14 of U501 set up the tuning voltage for the local oscillator (VT/LO) and the VREF tuning voltage. The VT/LO tuning voltage adjusts the frequency of the local oscillator to produce the IF frequency of the desired channel. A sample of the local oscillator's frequency is fed back to U501 pins 11 and 12 to serve as feedback for the phase lock loop (digital AFT information is also fed to U3101 from U2001 over the serial bus which in turn adjusts U501). The band switching control signals from U501 pins 6, 8 and 9 control a band switching matrix which in turn generates band switch voltages that tell the filters what band to tune. At the same time, the VREF tuning voltage is summed with D/A voltages from U3101 and sent to the single and double tuned filters to tune the desired channel's RF carrier. The D/A levels are set via digitally stored alignment data.

The alignment data for main chassis tuner channels is stored in U3102, the EEPROM, and is used by U3101, the microprocessor, during channel selection. In the case of the PIP tuner, the alignment values are stored in U8302, the PIP EEPROM.

Pins 34, 35 and 36 of U3101 output a PWM (pulse width modulated) signal that is low pass filtered and summed in U3801 with the VREF (voltage reference) from the PLL circuitry. These voltages control the secondary and primary of the double tuned and single tuned filters respectively. The actual voltage to the filters is a function of the tuning voltage from the local oscillator plus a correction voltage from the D/A's of U3101.

U3801 forms the interface circuit that low pass filters the

CIRCUIT OVERVIEW (Continued)

PWM signal from U3101 and sums it with the VREF tuning voltage.

System Control

The CTC179 chassis is a digitally controlled television receiver. The system control circuit governs the entire television. The control circuits are not only responsible for turning the set on and off, but also for aligning the different circuits such as deflection and signal. Adjustments that were aligned with a potentiometer on other chassis are now aligned digitally via the microprocessor with the values stored in the EEPROM.

The CTC179 system control circuit includes a main microcomputer (U3101) and a 4K EEPROM (U3102). Two tuner PIP versions of the chassis also have an additional microcomputer (U8301) with an accompanying EEPROM to control the PIP circuit and its associated tuner. The control system communicates and controls other devices on the chassis with a four wire bus structure - IM Clock, IM Enable, I2C Clock and I2C/IM Data. The two separate buses (IM and I2C) share a common data line.

The I2C bus communicates with the majority of the digital devices. The IM bus communicates with PIP (U8301). The I2C bus passes through the bus isolator (U3103). The isolator allows the microprocessor to "jettison" devices on the bus in the event of the power failure and to prevent loading of the bus by devices that are not powered in the standby mode. The television processing IC, T-2 Chip (U2001), is independently connected to the bus isolator to enable the micro to communicate with it while disconnected from the rest of the bus.

The CTC179 main chassis devices that are controlled by the I2C bus are the main tuner PLL (U501), bus expander (U2602), stereo decoder (U1600) and the T2-Chip (U2001). Devices that are controlled on the CTC179 I/O board are the video switch (U6501), audio switch (U1402), graphic equalizer (U1100), TVB main (Tone Volume Balance - U1502) and TVB audio (U1504).

Standby/AC Line Dropout Detector and Reset

The reset circuitry of the microprocessor monitors the standby supply and warns the micro when a power failure is imminent. Q3104 is normally biased on when the standby 20V supply is present. When the standby 20V supply drops to about 15V, Q3104 turns off which turns off Q3103 applying a LO to pin 2 of U3101. When this occurs, the microprocessor disconnects both buses via the bus isolator (U3103) and proceeds to go into a backup routine.

The microprocessor has approximately 100ms to store the present condition of the TV in the EEPROM. CR4605 is normally forward biased which charges C4613, a large value capacitor. When a power failure occurs, CR4605 turns off and C4613 holds up the 12V and 5V standby supplies long enough to give the microprocessor time to store the following; Channel Antenna A, Channel Antenna B, Volume, Mute, On/Off State and Time of Day

If power is down for approximately 15 seconds or less, the microprocessor will turn the TV back on when power is restored. If power is down for longer than 15 seconds, the microprocessor will place the TV in the off mode. All users settings are stored in the EEPROM as they are changed so there is no need for the microprocessor to store these settings in RAM.

As standby power continues to fall, the reset circuitry will eventually reset the microprocessor. Q3501 is normally off because of the base bias from the 12V standby supply. When the standby supplies begin to drop during a power failure, the 12V supply drops before the 5V supply. The divided down sample of the 12V supply on the base of Q3501 will drop, turning on Q3501. This turns on Q3502 pulling the collector voltage of Q3503 LO resetting the microprocessor. C3505 holds the reset line LO long enough for the oscillator to stabilize when power is restored. During normal operation Q3503 clamps the reset line to 5V.

C3502 and CR3501 provide for kine arc detection. When a serious kine arc occurs, the transient created on the 5V standby line is coupled through C3502, forward biasing CR3501. This turns on Q3502 and activates the reset circuit as described previously.

The system reset line resets all the devices on the data bus. Once U3101 has been initialized, U3101 pin 9 goes LO turning off Q3102, allowing the system reset line go HI. The other devices on the data buses then begin to operate.

EEPROM and T2-Chip Power Control

The microprocessor controls the power to the EEPROM (U3102) and T2-Chip (U2001). After the microprocessor is reset, U3101 pin 23 goes HI turning on Q3310. This turns on Q3105 supplying 5V to the EEPROM. Q3310 also turns on Q4108 supplying 7.6V standby to the T-2 Chip. The standby 7.6 volts reverse biases CR4114 causing Q4105 to turn on providing the run 7.6V to the T2-Chip when the run 12V comes up. The power control circuitry gives the microprocessor the ability to turn off the power to the EEPROM and T2-Chip in the event one of the devices locks up. The power to the EEPROM and T2-Chip is turned off and then back on each time the TV is turned on. This resets the EEPROM and T2-Chip each time the set is powered up.

Main Power Supply On/Off Control

The CTC179 chassis are turned on and off by controlling the main power supply AND the T2-Chip. Unlike the CTC177 chassis which used only a data command to turn on the horizontal oscillator causing the set to turn on, the CTC179 is a little more complex. When the power cord is first connected to AC, standby supplies come up, the micro is reset, and pin 23 of the U3101 goes HI applying power to the EEPROM and T2-Chip. The microprocessor then checks the EEPROM address for an acknowledgment. If the EEPROM is acknowledged, the microprocessor waits for the next command. If there is no EEPROM acknowledgment, the microprocessor continues to try to contact the EEPROM. This can be seen on the oscilloscope as continuous data activity on the I2C data line.

When the power button is pressed or a remote control ON command is received, pin 23 goes momentarily LO resetting the EEPROM and T2-Chip. Once this takes place, pin 28 of U3101 goes HI, throwing the bus isolator switch at U3103 pins 6 and 12, connecting the T2-Chip clock and data lines to the I2C bus. Once connected, the T2-Chip is told via a data

CIRCUIT OVERVIEW (Continued)

command to turn on the horizontal oscillator. If communication is successful, U3101 outputs a HI at pin 10 throwing the other set of switches on U3103 pins 5 and 13, connecting the rest of the I2C devices to the bus. If communication is not successful, an error code is stored in the EEPROM and the power supply is not turned on.

At the same time, the HI from U3101 pin 10 is applied to the base of Q3106 turning it on. When Q3106 turns on, it turns on Q4103 which in turn switches on Q4102, supplying power to the power supply regulator IC (U4101). The regulator begins to run supplying power to the deflection output circuitry causing the rest of the TV to turn on.

The collector supply for Q3106 is derived from the audio circuitry on the I/O board. If there is a failure in the audio circuitry such as DC on the speaker lines, this voltage is turned off by the audio circuitry causing the power supply to turn off. When this occurs, the microprocessor will eventually detect a loss of the run supply and revert to the off mode.

Once the power supply has started running, the microprocessor checks for acknowledgments from IC's on the bus. If the correct acknowledgment is not received, the microprocessor turns off the TV and stores an error code in the EEPROM. If the power button is pressed in this state, the television will attempt to start three times. If after the third try the microprocessor does not receive the correct acknowledgments, the control circuitry will revert to the off mode. In previous chassis, this symptom indicated an XRP shutdown. This is NOT the case in the CTC179 chassis family.

Feature Autodetection

There are exceptions to the above mentioned IC acknowledgments. Certain features of the CTC179 chassis family are autodetected. The microprocessor checks for the appropriate hardware and if detected, supports that feature. If not, it assumes that feature is not supported in the chassis and runs without it. In these instances, the set will not shutdown, but will run minus the feature. For example, if the headphone TVB IC is not detected, none of the headphone options will appear in the audio menu.

Run Supply Detector

The system control circuitry monitors the run 12V supply once the set has been turned on. If for any reason the run supply is not present when the set is initially turned on, the microprocessor will turn the TV off and then try to restart the set. If after three tries the run supply is not detected, the microprocessor places the TV in the off mode. If the loss of the run supply occurs while the set is running, the microprocessor places the set in the off mode. Pressing the power button will restart the detection process.

Pin 40 of U3101 is the run detect line and is normally HI when the set is on. Q3312 is biased from the pre-regulated 12 volt run supply. The base is held constant by CR4117, a 11V zener diode. The emitter is biased through CR3308. Under normal operating conditions, Q3312 is turned on. This turns on Q3311 supplying a HI to U3101 pin 40. When the 12V run supply is not present, Q3312 turns off, causing Q3311 to turn off. U3101 pin 40 is pulled LO signaling the microprocessor the run supply has been lost.

Microprocessor Input Signals

Certain video and deflection signals are input to U3101. Selected video out is buffered by Q3306 and applied to pin 13 for the closed caption decoder contained within U3101. Video out of the T2-Chip is buffered by Q3101 and applied to pin 38 for tuning sync. Horizontal and vertical deflection pulses are applied to U3101 pins 24 and 25 respectively to provide a synchronization reference for correct positioning of the on screen display.

Keyboard Interface

The keyboard interface is the same interface as used in the past. Key drive line KD1 drives the POWER, VOL. UP and VOL. DN. When one of these buttons is pressed, KD1 pulses the corresponding sense line LO. U3101 detects which button has been pressed by monitoring the sense lines for the KD1 pulse. The other three switches pull KS1, KS2 and KS3 to ground. When U3101 sees a constant LO instead of a HI to LO pulse, it knows one of the other three buttons has been pressed and will initiate the appropriate function based on which sense line is pulled LO.

IR Input

Infrared remote signals are amplified by IR3401 and appear at U3101 pin as 5 Vp-p data pulses. When no IR is received, the DC level at U3101 pin 3 is 5V. IR3401 is powered by the 12V standby supply. Q3200 and Q3201 drive the power L.E.D. when the set is on. They also flash the power L.E.D. when IR is received from the remote control.

OSD Circuit

The CTC179 on screen display circuit consists of red, green and blue analog signals from U3101 pins 19, 18 and 17 respectively. These signals along with the FSW (fast switch) signal are sent to the T2-Chip through buffer transistors Q3303, Q3302 and Q3301 and input to U2001 pins 40, 41 and 42. These on screen display signals include the television's user menus and also the closed caption information. The FSW signal is also sent to the video features IC (U2501) to turn off edge replacement during the time OSD is active to prevent any video from appearing in the OSD.

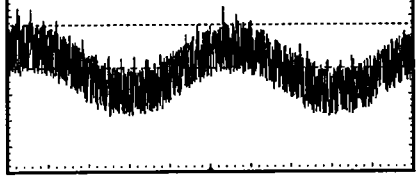
XRP (X-ray Protection) Detection

Circuitry in the T2-Chip (U2001) detects possibly unsafe conditions and shuts the deflection circuitry down automatically. The output of the XRP detector is latched and is read by the microprocessor over the serial bus. When an XRP fault is reported to the control microcomputer, it turns the main switching supply and horizontal output off, waits for 1.75 seconds, and then turns the instrument back on. If three shutdowns are detected in the span of one minute of the time of day, the instrument will remain in the off state, awaiting the customer to turn it back on.

WAVEFORMS

A01

A02



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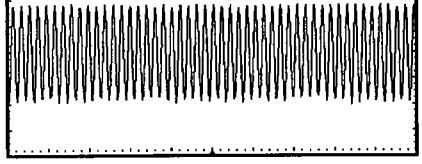

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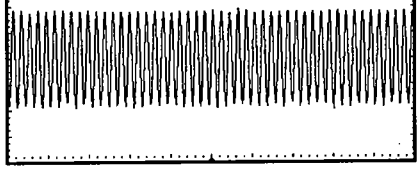

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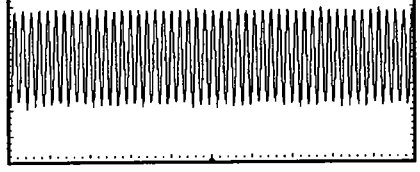

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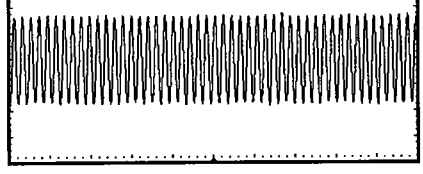

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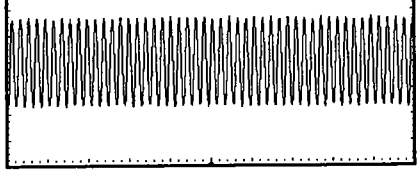

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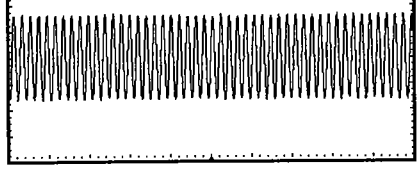

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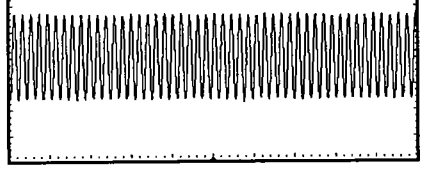

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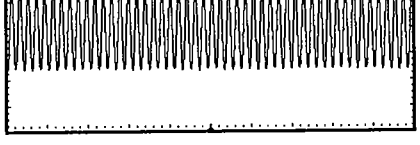

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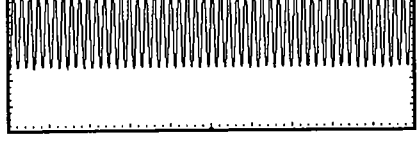

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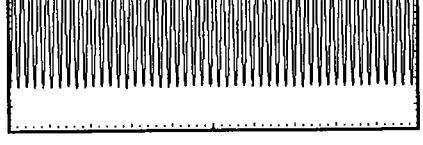

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WAVEFORMS (Continued)

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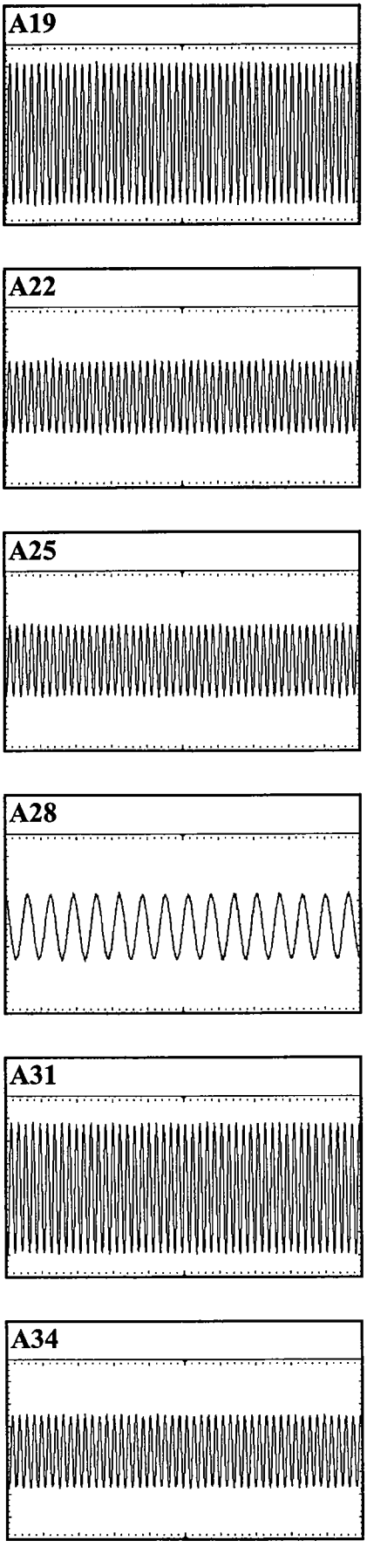

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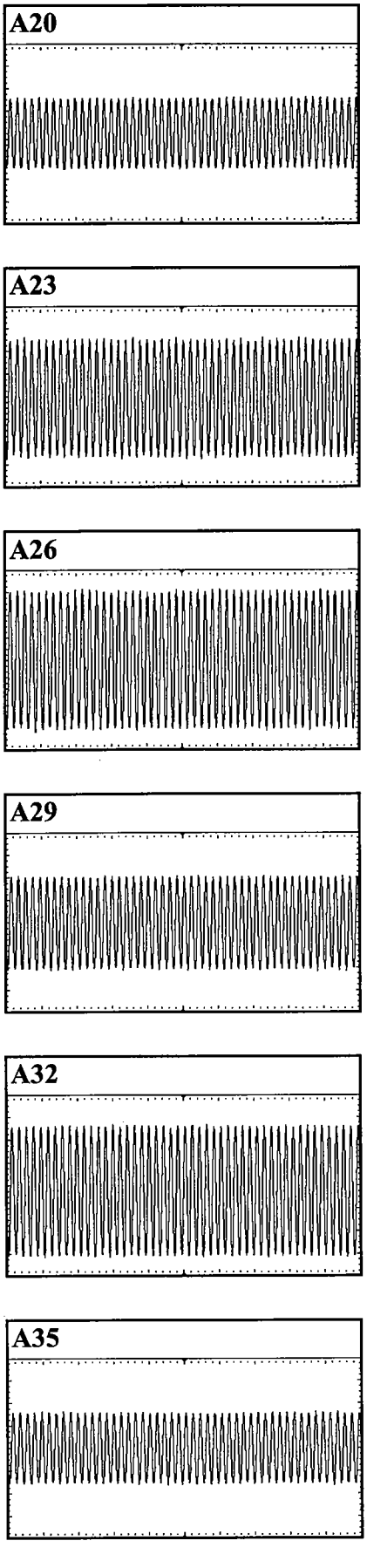

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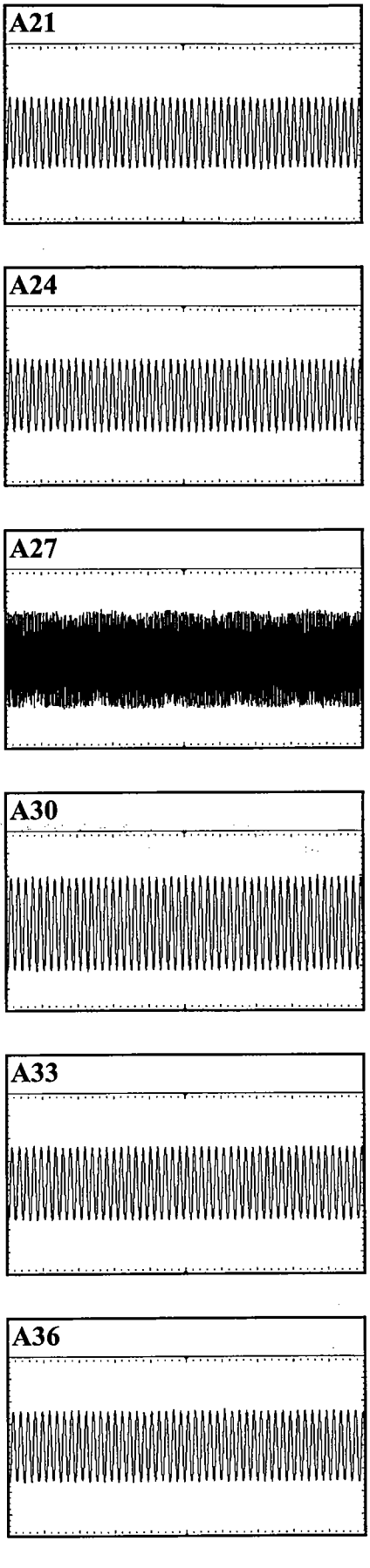

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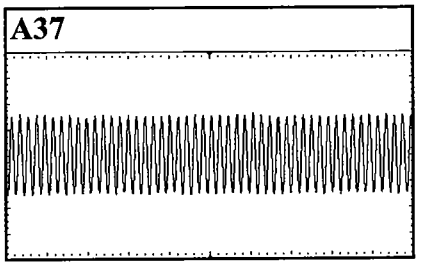

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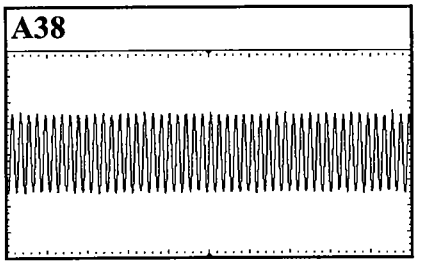

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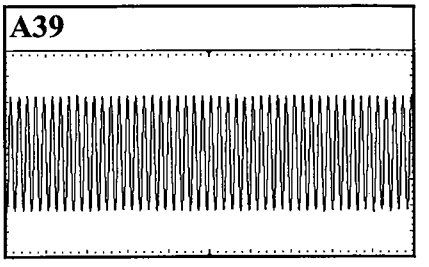

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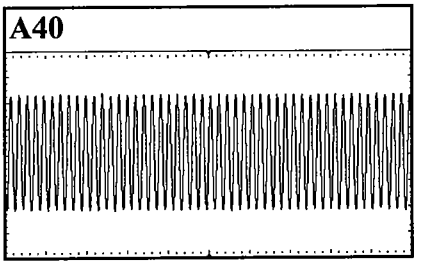

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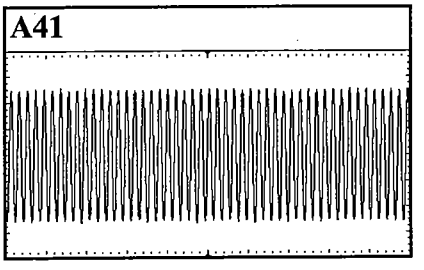

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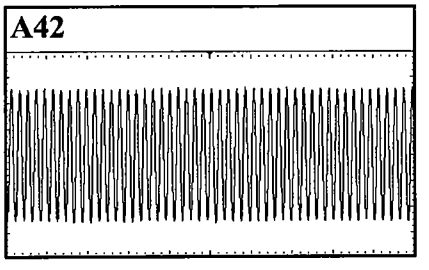

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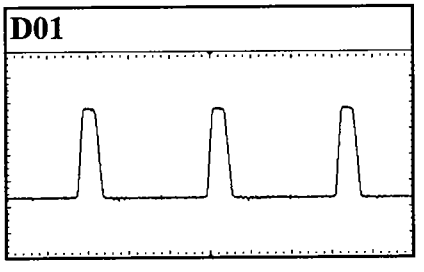

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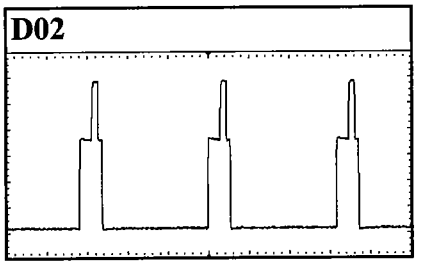

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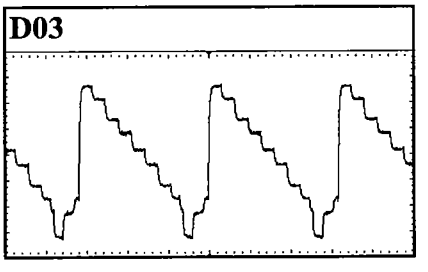

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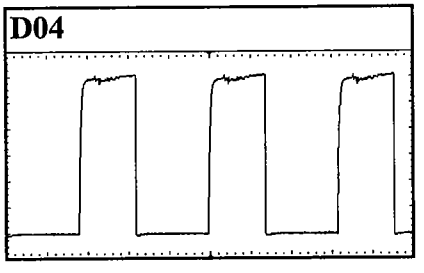

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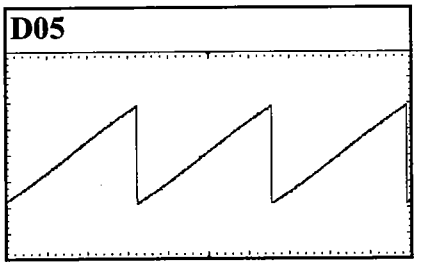

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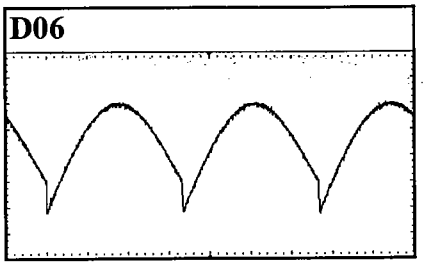

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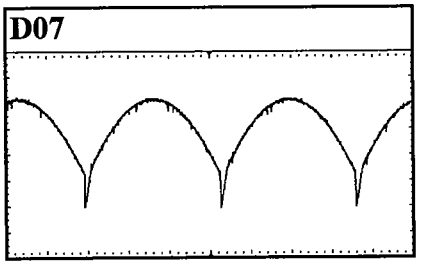

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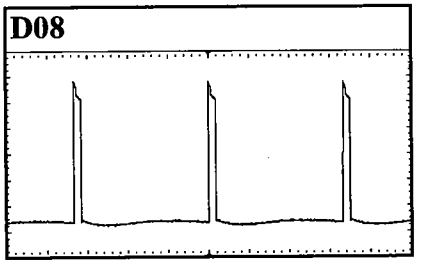

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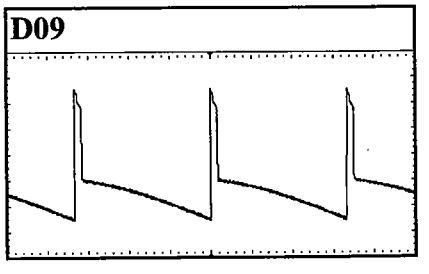

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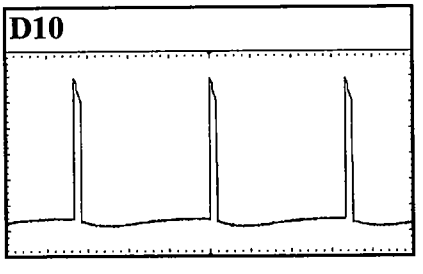

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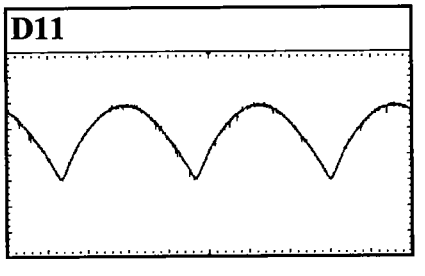

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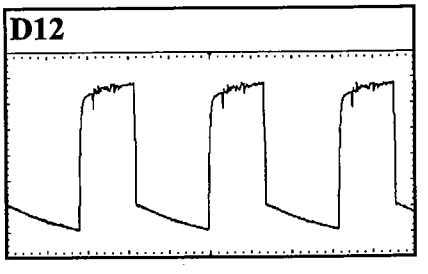

WAVEFORMS (Continued)

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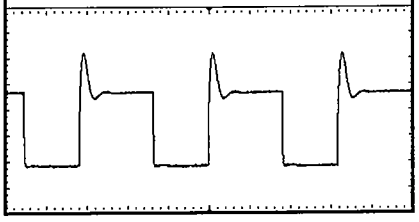

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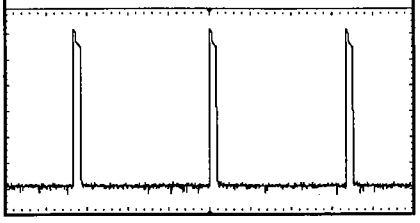

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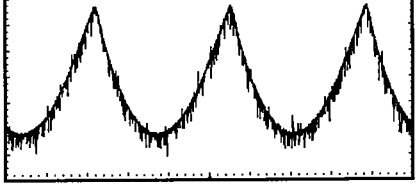

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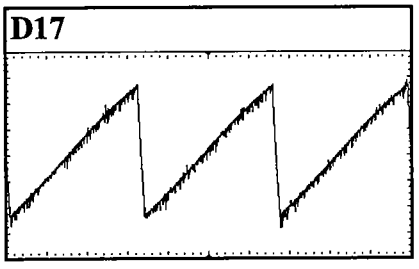

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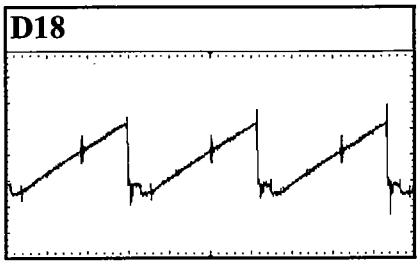

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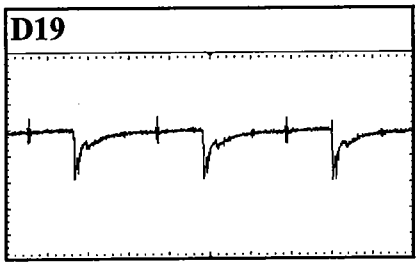

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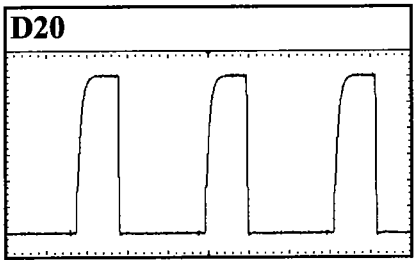

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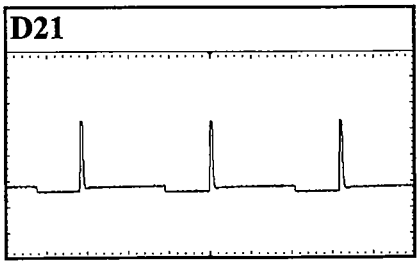

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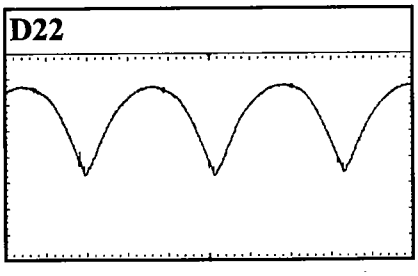

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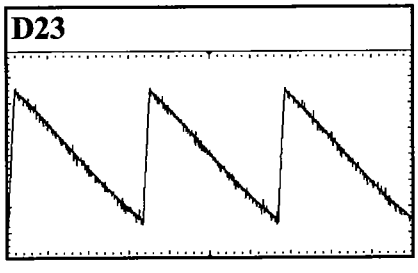

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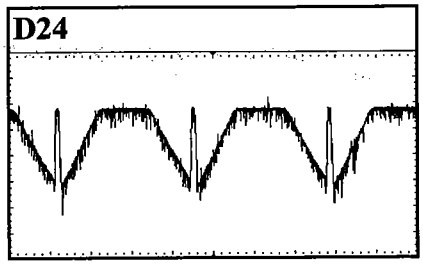

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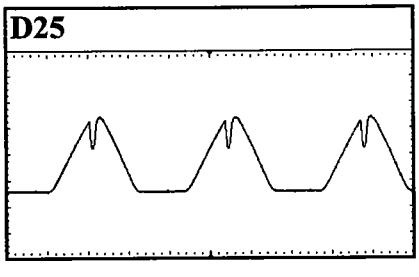

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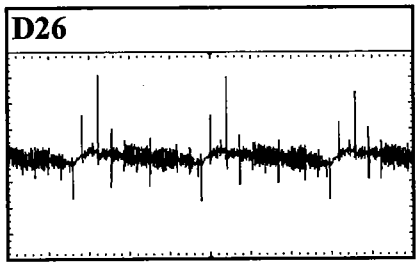

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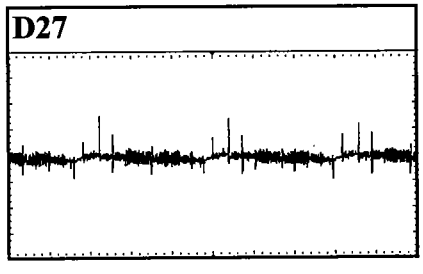

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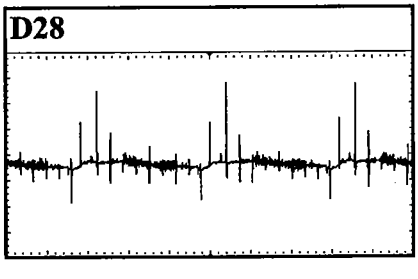

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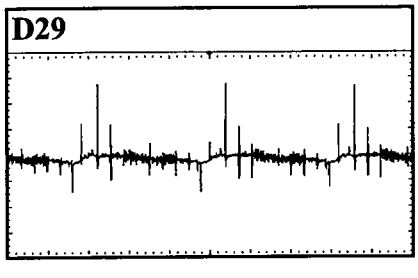

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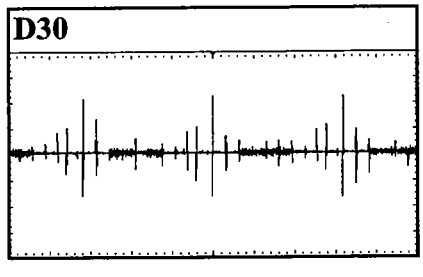
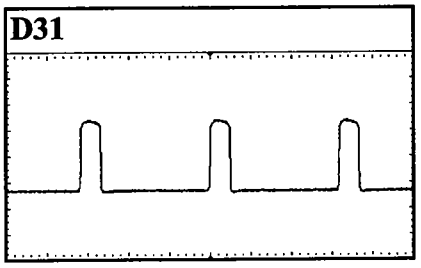


WAVEFORMS (Continued)

D31



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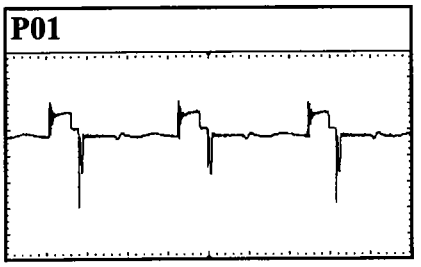

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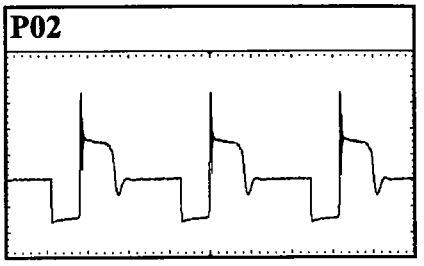

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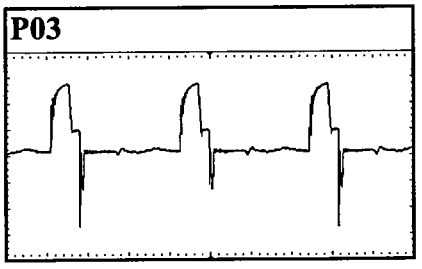

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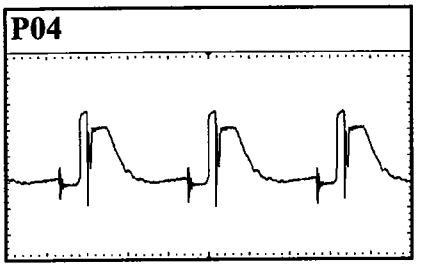

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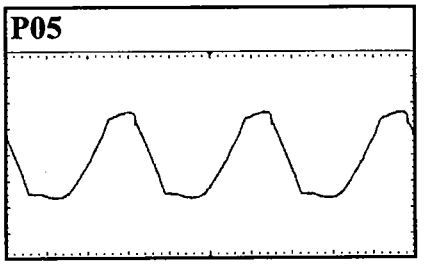

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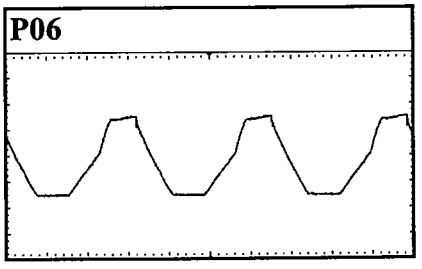

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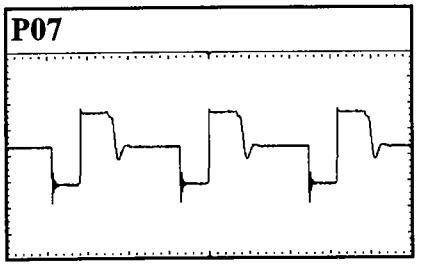

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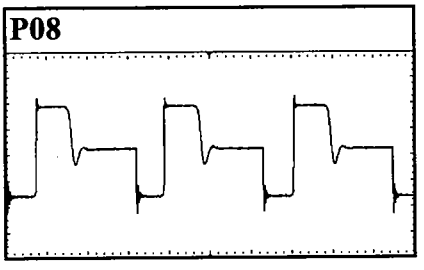

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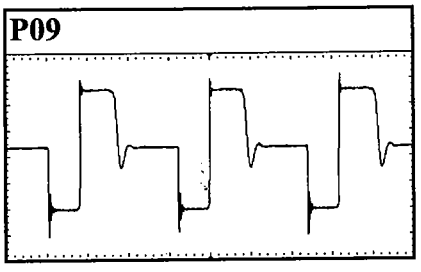

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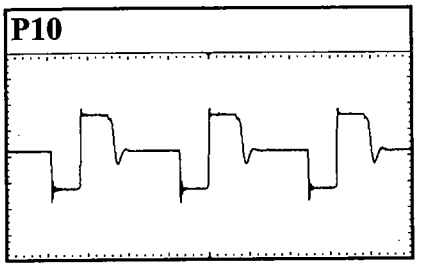

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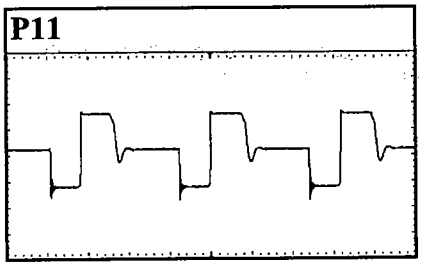

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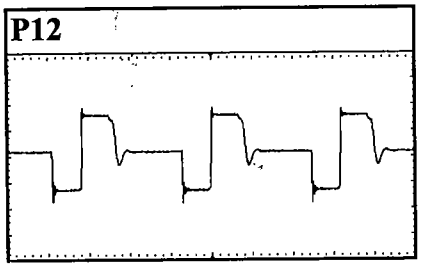

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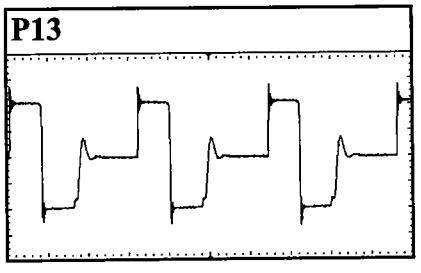

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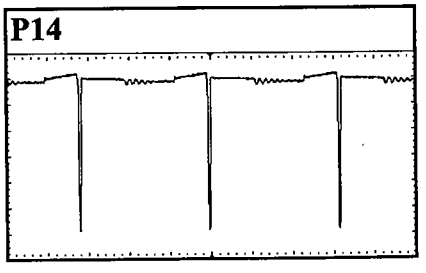

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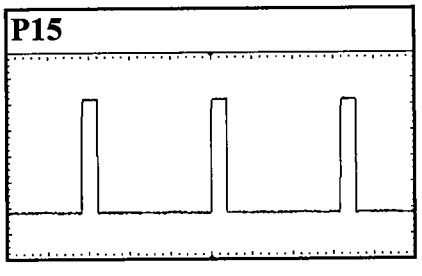

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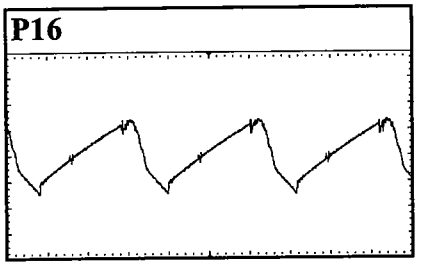
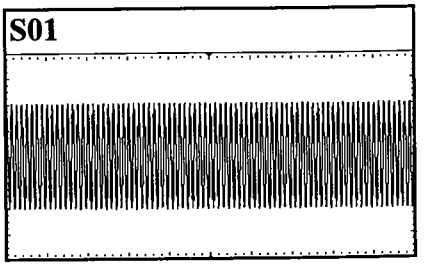
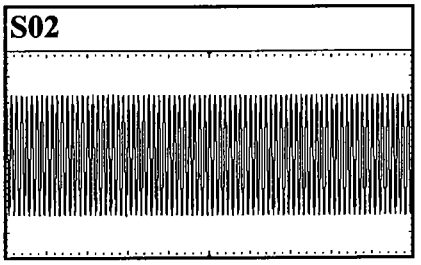


S01

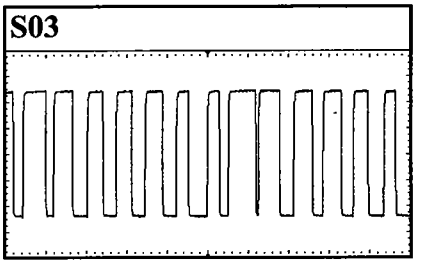


WAVEFORMS (Continued)

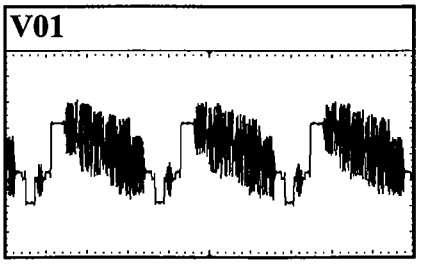
S02



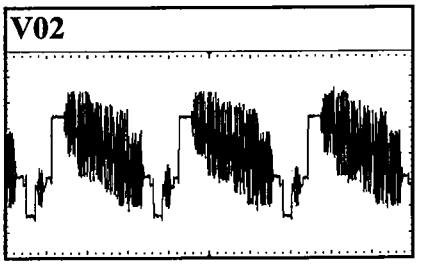
S03



V01



V02



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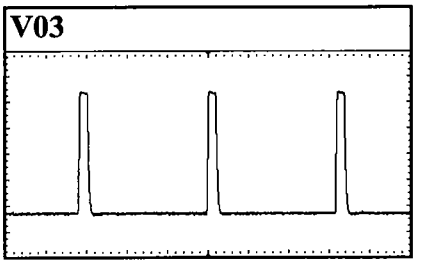

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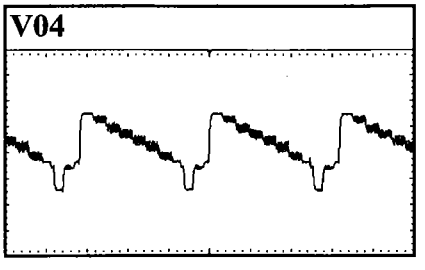

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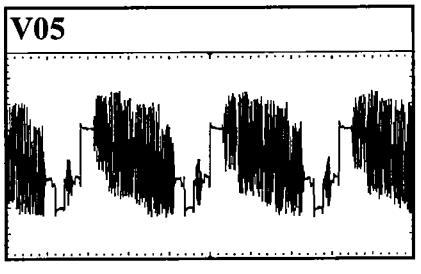

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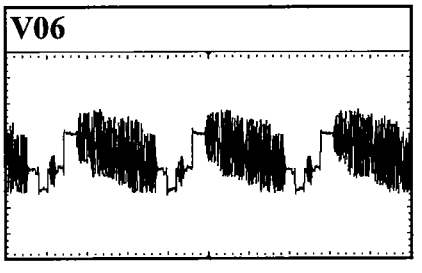
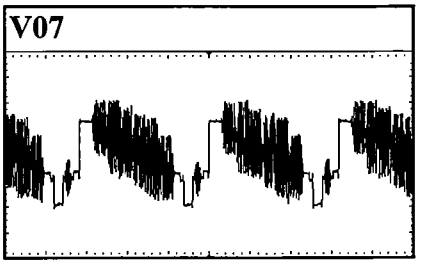
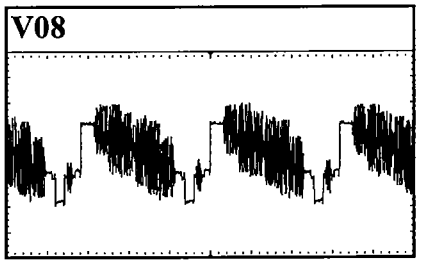


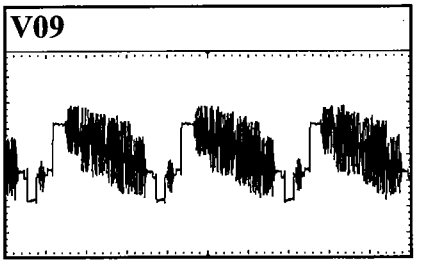
V07



V08



V09



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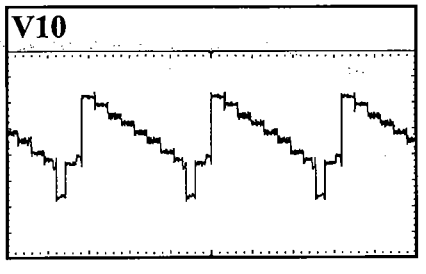
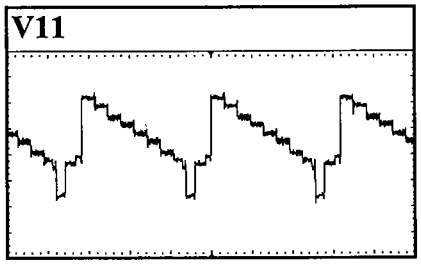
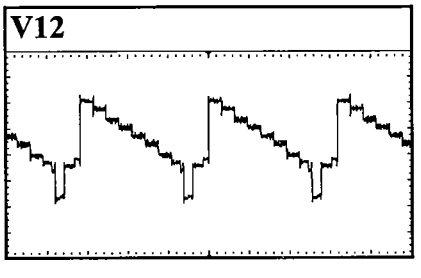


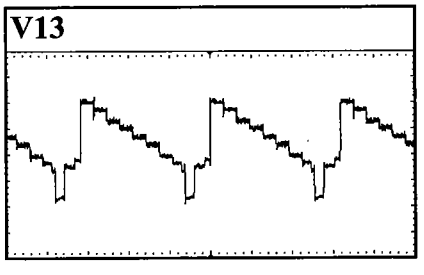
V11



V12



V13



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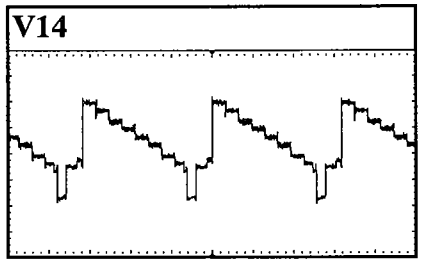

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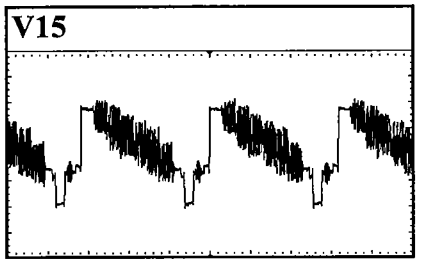

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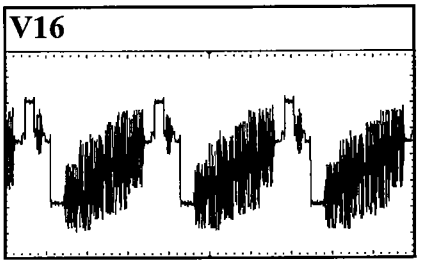

WAVEFORMS (Continued)

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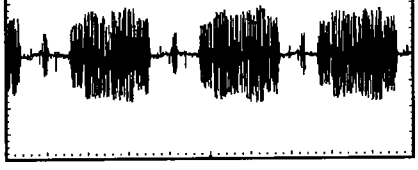

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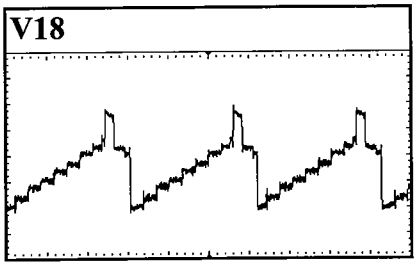

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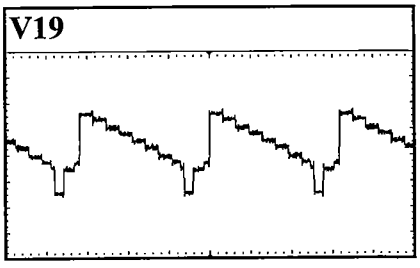

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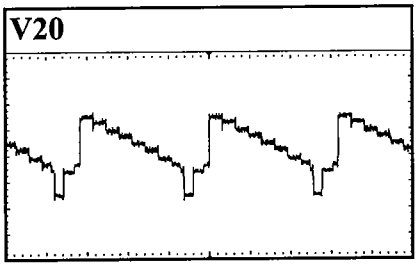

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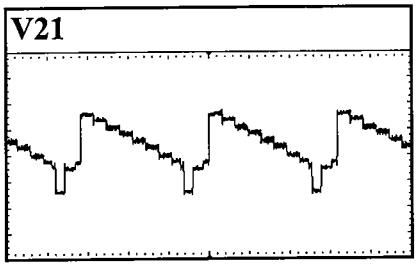

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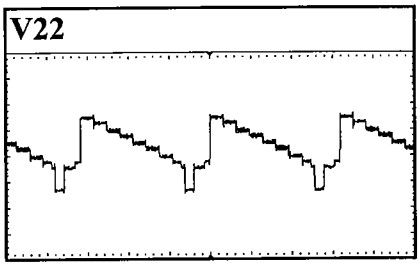

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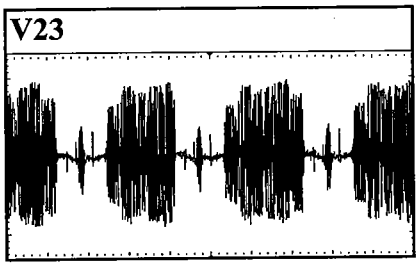

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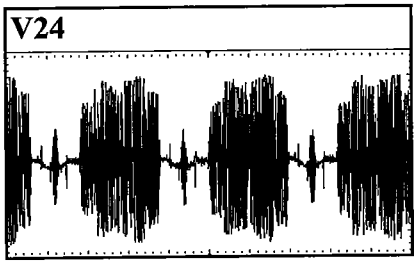

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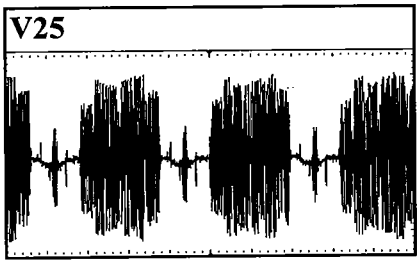

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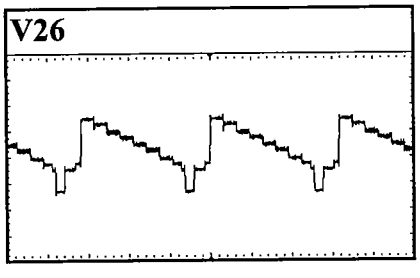

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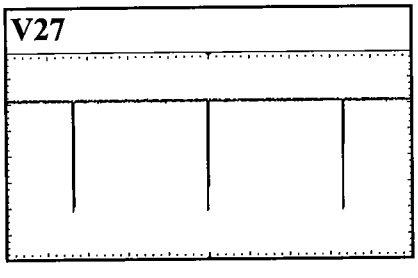

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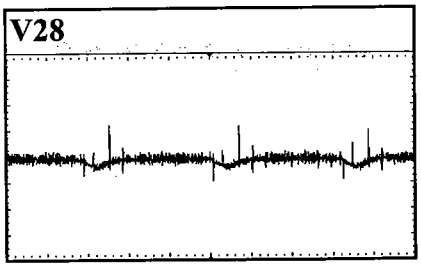

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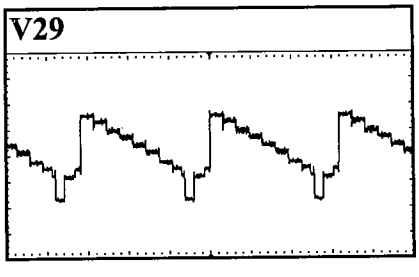

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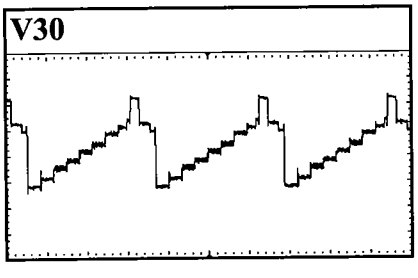

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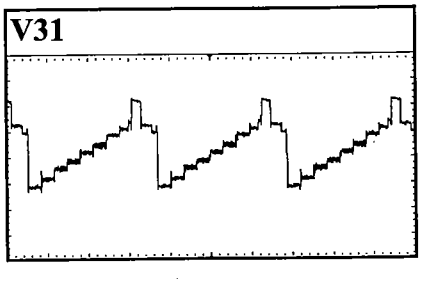

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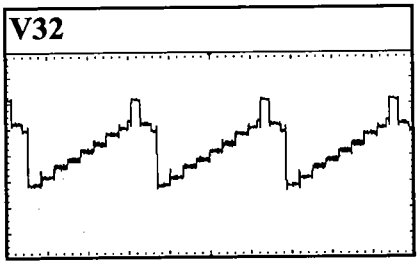

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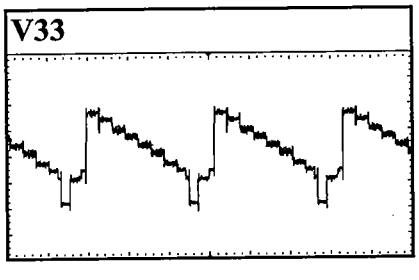

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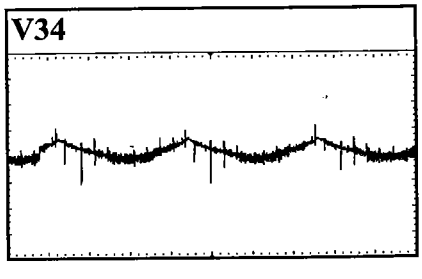
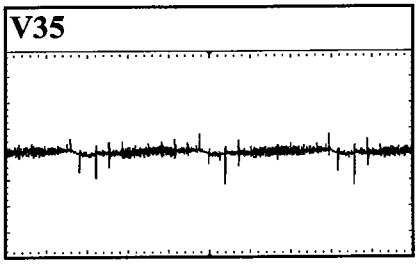


WAVEFORMS (Continued)

V35



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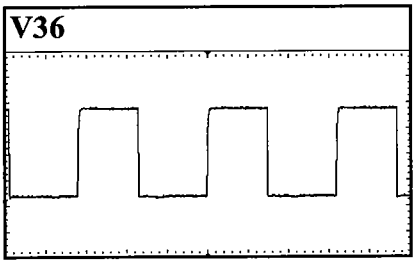

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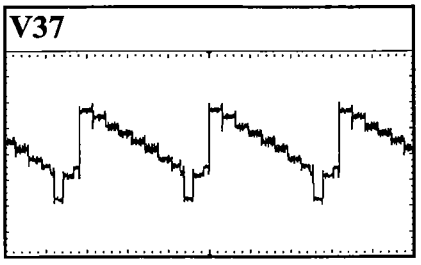

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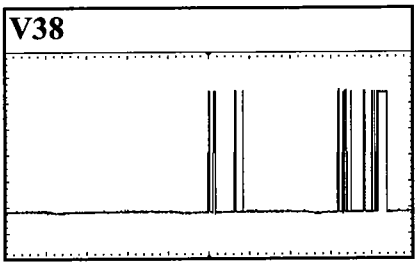

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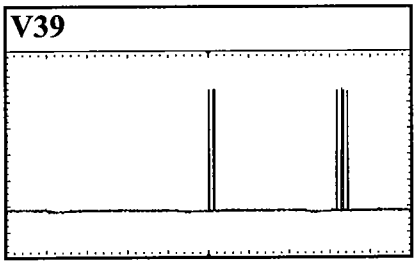
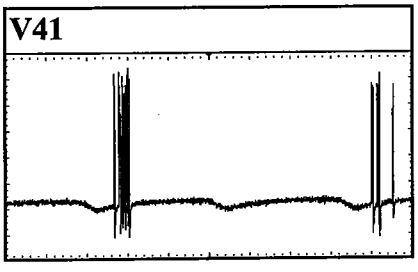


V40

V41



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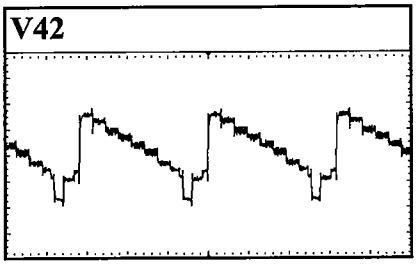

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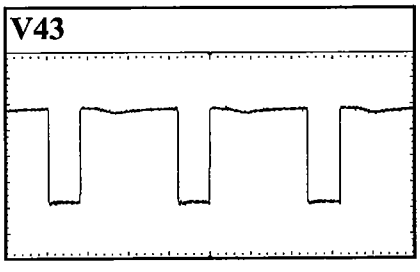

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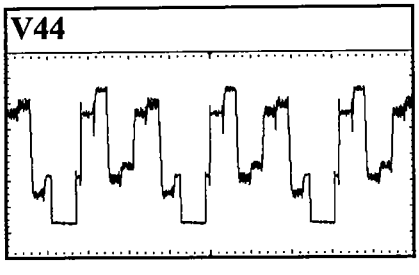

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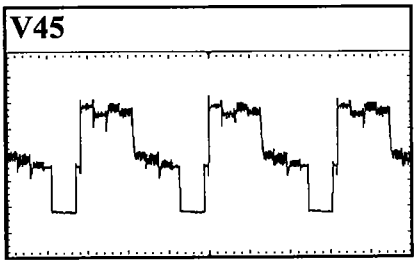

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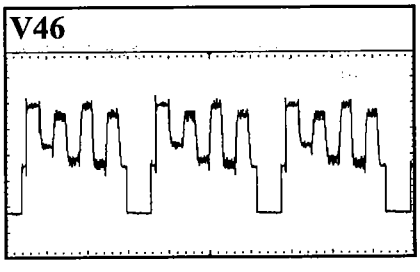

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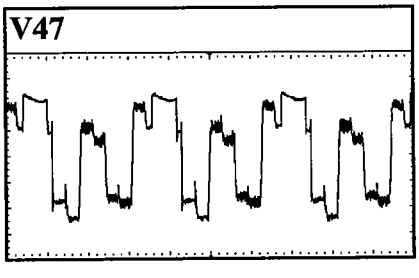

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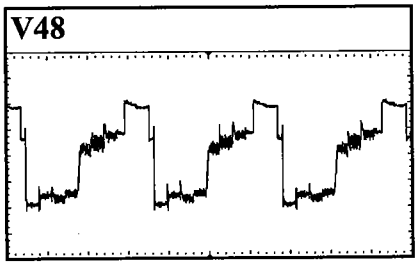

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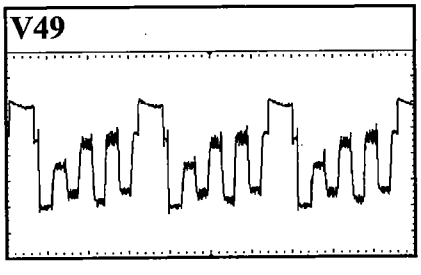

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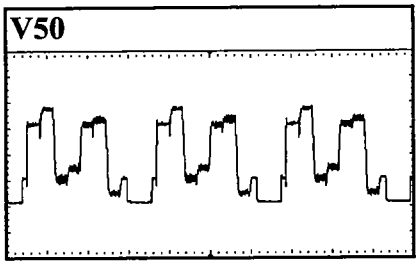

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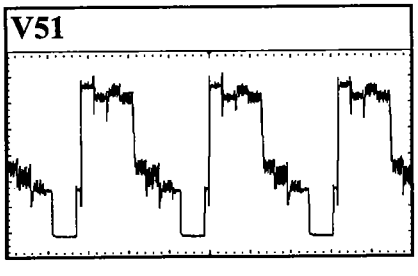
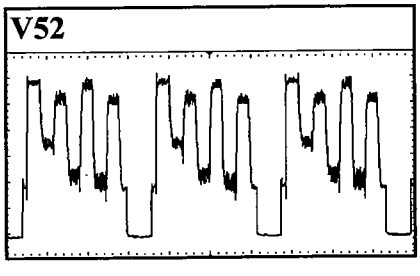
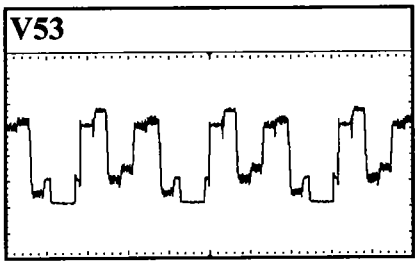


V52



WAVEFORMS (Continued)

V53



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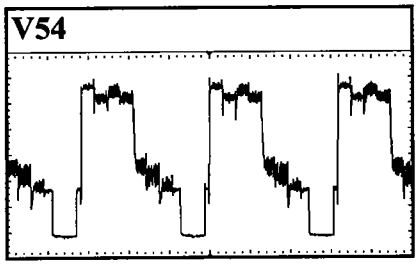

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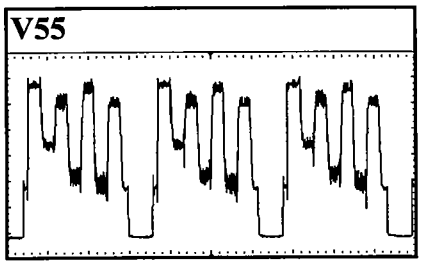
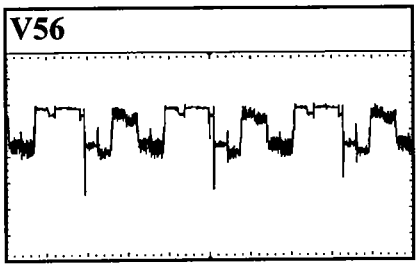


V56



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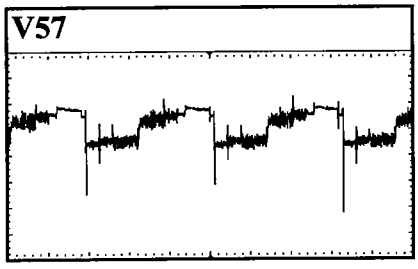
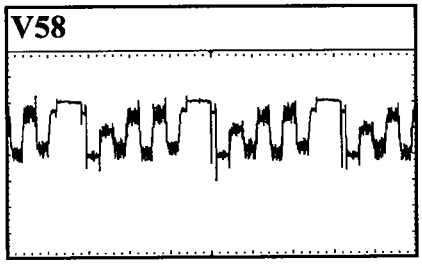
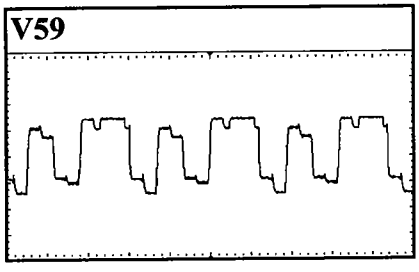


V58



V59



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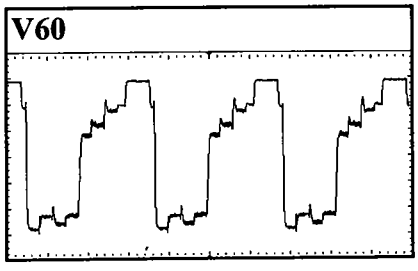
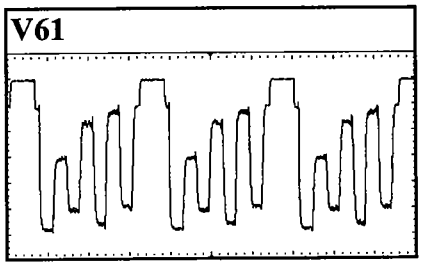
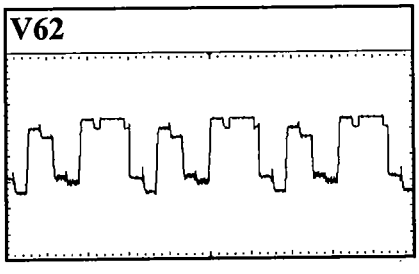


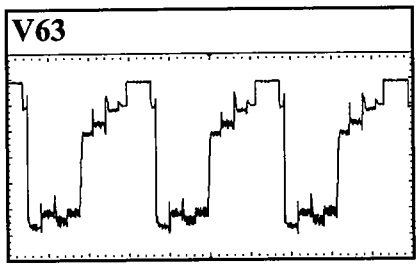
V61



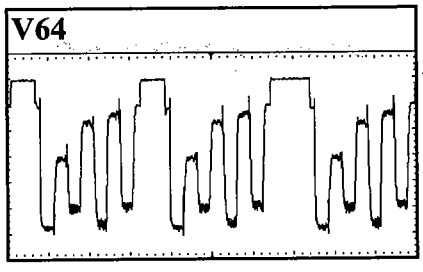
V62



V63



V64



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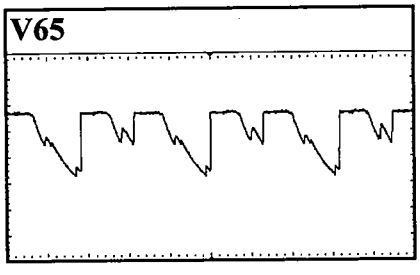

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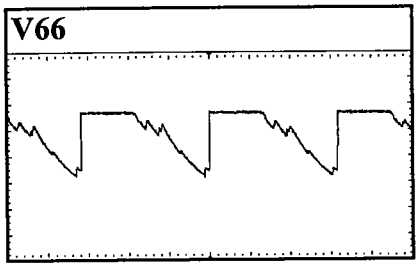
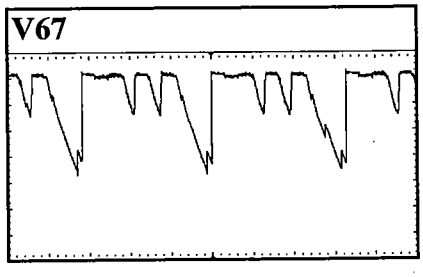
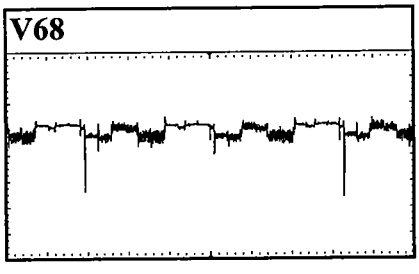


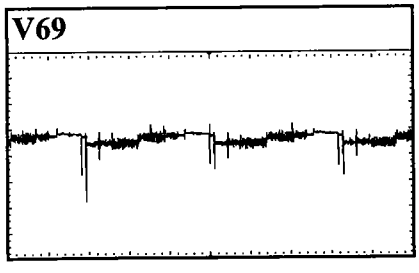
V67



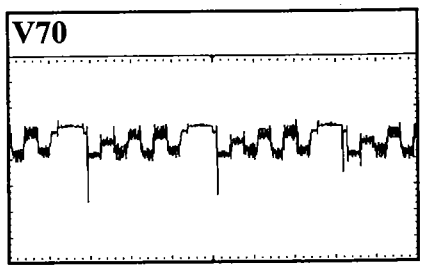
V68



V69

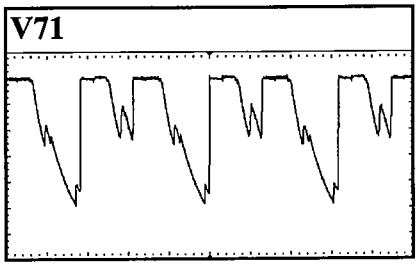


V70

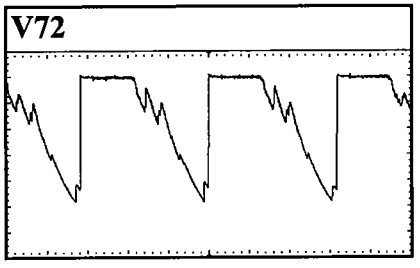


WAVEFORMS (Continued)

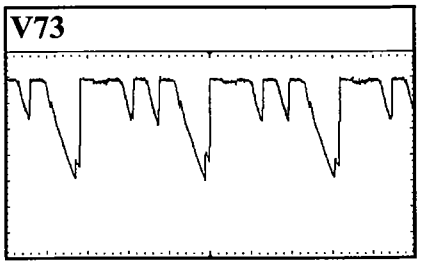
V71



V72



V73



V74

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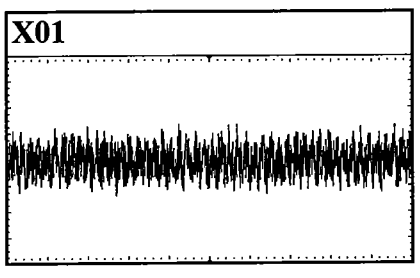

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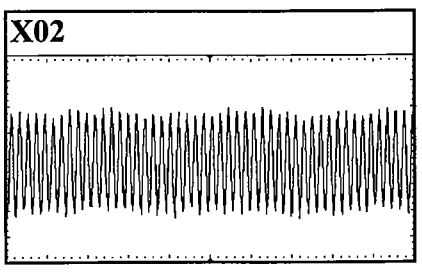

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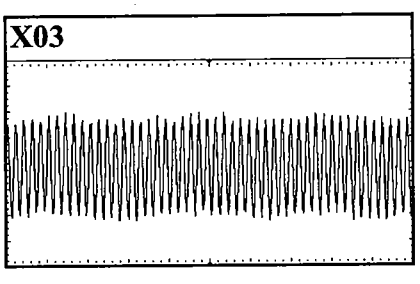

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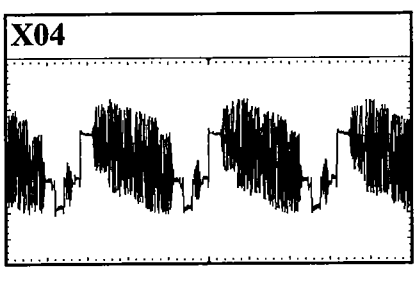

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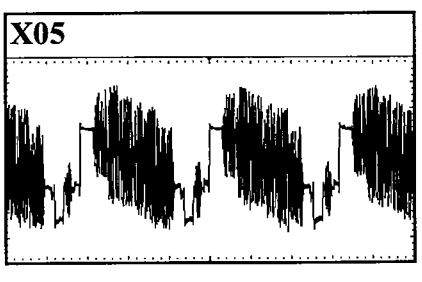

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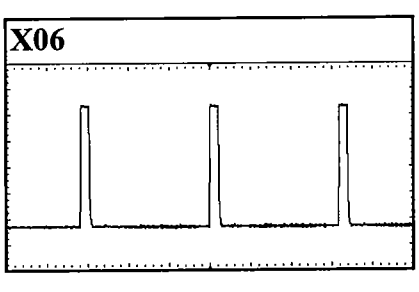

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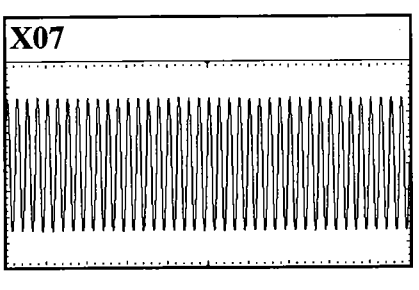
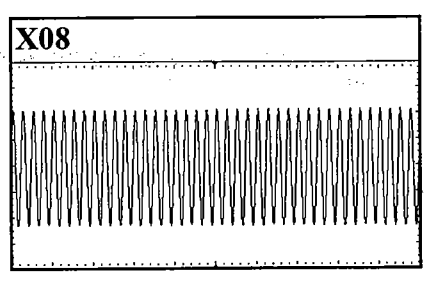


X08



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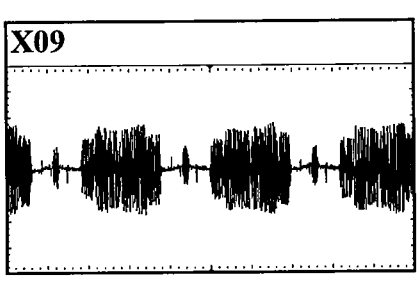

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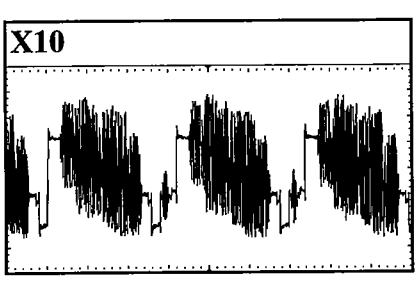

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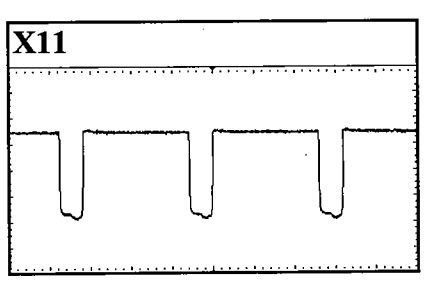

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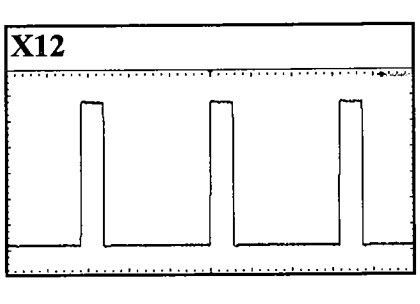

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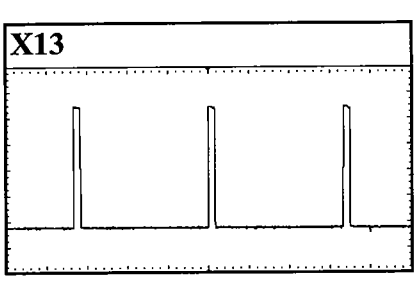

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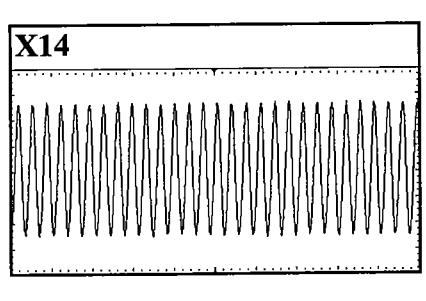

WAVEFORMS (Continued)

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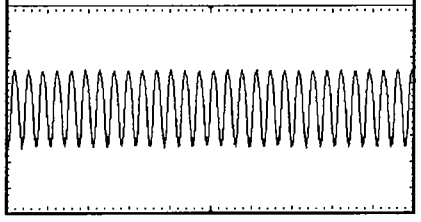

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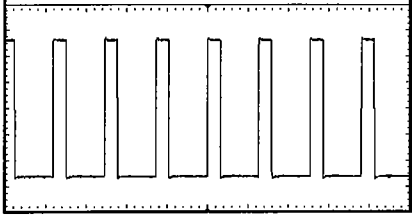

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X18

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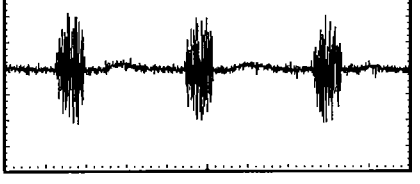

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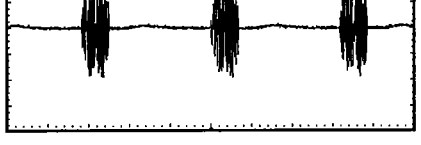

X22

X23

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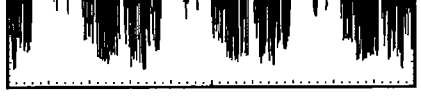

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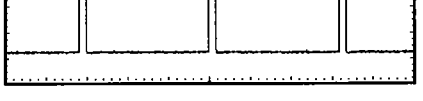

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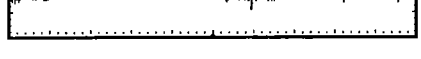

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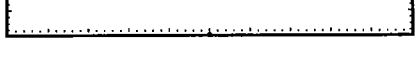

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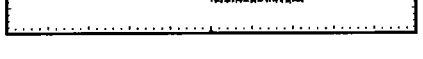

COMPONENT LOCATION GUIDES

CRT DRIVER CIRCUIT BOARD (Top Side)

C5001K EE6
C5002K MM9
C5003K II10
C5004 ..... LL2
C5005 ..... KK3
C5006 ..... KK4
C5007 ..... LL5
C5008P LL4
C5009P LL3
C5010 ..... MM1
C5011 ..... II2
C5012 .... MM10
C5013 ..... EE2
C5016 ..... NN10
C5203 ..... BB7
C5205K AA7
C5208 ..... AA2
C5209K CC7
C5210 ..... BB3
C5211 ..... BB2
C5212 ..... BB1
C6201 ..... EE9
CR5001 ..... NN1
CR5002 ..... MM1
CR5003 ..... LL4
CR5004 ..... GG4
CR5005 ..... MM8
CR5006 ..... EE4
CR5007 ..... HH2
CR5008 ..... NN8
CR5009 ..... EE3
CR6201U ... GG6
E5001 ..... EE7
E5002 ..... MM1
E5007 ..... II6
E5008 ..... KK10
E5009 ..... II10
E5010 ..... FF10
E5011 ..... FF10
E5012 ..... EE9
FB5201 ..... AA4
FB5202 ..... AA4
FB5203 ..... AA2
J5001 ..... DD10
J5002 ..... NN3
J5003 ..... JJ1
J5101 ..... DD8
J5201 ..... AA1
J5202 ..... CC10
J5203 ..... AA10
JW501 ..... II1
JW502 ..... NN7
JW503 ..... BB5
JW508 ..... NN1
JW509 ..... EE1
KS5001 ..... HH8
L5001 ..... II6
L5002 ..... JJ7
L5003 ..... EEE4
L5004U MM2
L5005U MM2
L5006 ..... HH4
L5007 ..... LL6
L5008 ..... EE4
Q5001F GG2
Q5002F MM7
Q5003F DD2
Q5004F GG5
Q5005F GG3
Q5006F KK7
Q5007F MM8
Q5008F EE5
Q5009F DD3
Q5204 ..... AA8
Q5205 ..... AA9
Q5206F BB6
Q5207F BB5
R5003 ..... LL1
R5004U II4
R5005U KK8
R5006U FF5
R5007 ..... HH4
R5008 ..... LL8
R5009 ..... FF4
R5010 ..... II1
R5011 ..... NN5
R5012 ..... GG1
R5014 ..... MM4
R5019 ..... LL3
R5024 ..... KK1
R5025U GG4
R5026 ..... MM6
R5027U KK7
R5029U EE4
R5031U JJ3
R5032U MM5
R5033U JJ2
R5034 ..... EE7
R5035 ..... LL9
R5036 ..... KK10
R5037 ..... JJ9
R5038U JJ3
R5039U LL6
R5040U JJ2
R5041 ..... GG2
R5042 ..... MM6
R5043 ..... DD1
R5044U HH1
R5045U ... NN10
R5046U EE1
R5079 ..... LL3
R5089 ..... KK9
R5207 ..... BB9
R5213 ..... BB7
R5214 ..... CC4
R5215U CC9
R5216 ..... BB6
R5217U BB3
R5219 ..... CC4
R5221U CC3
R5224 ..... BB4
R5225 ..... CC3
U5001V KK3

CRT DRIVER CIRCUIT BOARD (Bottom Side)

C5014 ..... L2
C5015 ..... N4
C5017 ..... M5
C5018 ..... J1
C5019 ..... M2
C5021 ..... N3
C5022 ..... N4
C5023 ..... N3
C5024 ..... N6
C5202 ..... B10
C5204 ..... A8
C5206 ..... C5
C5207 ..... C6
JC501 ..... N2
JC502 ..... L3
JC503 ..... J3
JC505 ..... L4
JC507 ..... M2
JC511 ..... M1
Q5013 ..... M4
Q5014 ..... M4
Q5015 ..... M3
Q5016 ..... M5
Q5018 ..... M3
Q5021 ..... M5
Q5024 ..... M2
Q5028 ..... J3
Q5029 ..... L5
Q5030 ..... J2
Q5201 ..... B8
Q5202 ..... B9
R5001 ..... J3
R5002 ..... L1
R5013 ..... K3
R5015 ..... K4
R5016 ..... M6
R5017 ..... L1
R5018 ..... L1
R5020 ..... L3
R5021 ..... L3
R5022 ..... L4
R5023 ..... L4
R5047 ..... K4
R5048 ..... M5
R5049 ..... N5
R5050 ..... M3
R5051 ..... L4
R5052 ..... N5
R5053 ..... M4
R5054 ..... N4
R5055 ..... M5
R5056 ..... M5
R5058 ..... M3
R5060 ..... M4
R5062 ..... L2
R5063 ..... N5
R5064 ..... M5
R5065 ..... M3
R5068 ..... M3
R5069 ..... M4
R5070 ..... M2
R5072 ..... M4
R5073 ..... M2
R5083 ..... J4
R5084 ..... K3
R5085 ..... K5
R5086 ..... K4
R5087 ..... J2
R5088 ..... K2
R5201 ..... B9
R5202 ..... B8
R5203 ..... B8
R5204 ..... B8
R5205 ..... A9
R5208 ..... A9
R5210 ..... A8
R5211 ..... A8
R5218 ..... A8
R5220 ..... C5
R5222 ..... C1
R5223 ..... B10

D2T2PIP CIRCUIT BOARD (Top Side)

C507 ..... FF5
C8101 ..... DD13
C8104 ..... EE12
C8108 ..... DD12
C8111 ..... MM8
C8115 ..... EE15
C8117 ..... EE11
C8121 ..... DD9
C8232 ..... HH12
C8233 ..... HH11
C8234 ..... II13
C8239 ..... KK13
C8241 ..... NN11
C8247 ..... OO12
C8306 ..... OO5
CF8101P ... FF13
CF8102P ... EE11
CR8203 ..... PP13
CR8204 .... OO14
CR8205 .... QQ12
CR8301 ..... PP8
CR8302 ..... PP10
E706 ..... KK4
FB8201 .... KK10
FB8202 .... NN11
FB8203 ..... II14
FB8204 .... KK11
FB8205 ..... JJ13
FB8206 ..... JJ13
FL101K KK6
J8003 ..... HH10
J8006 ..... MM9
JW102 ..... DD11
JW103 ..... DD16
JW104 ..... DD11
JW106 ..... DD3
JW108 ..... FF15
JW109 ..... NN5
JW201 ..... GG12
JW202 ..... QQ15
JW203 ..... JJ15
JW204 ..... LL11
JW207 ..... RR12
JW209 ..... QQ15
JW301 ..... OO9
JW353 ..... DD5
JW354 ..... MM5
JW356 ..... QQ9
JW411 ..... MM9
JW701 ..... EE4
JW702 ..... GG5
JW706P JJ6
L101 ..... KK7
L102 ..... KK8
L103 ..... KK8
L104 ..... JJ8
L105 ..... JJ8
L106 ..... II7
L107 ..... HH8
L108 ..... HH8
L109 ..... HH8
L110 ..... HH8
L111 ..... HH8
L112 ..... HH7
L113 ..... GG7
L114 ..... GG8
L115 ..... GG8
L301 ..... JJ6
L302 ..... JJ6
L303 ..... II6
L304 ..... II6
L305 ..... HH6
L306 ..... HH6
L307 ..... HH6
L308 ..... JJ6
L402 ..... KK5
L403 ..... JJ4
L404 ..... II4
L405 ..... II5
L407 ..... HH5
L409 ..... HH4
L601 ..... FF8
L602 ..... FF7
L603 ..... FF8
L604 ..... EE8
L701 ..... EE6
L702 ..... EE6
L703 ..... EE6
L704 ..... EE7
L8101 ..... FF10
L8102 ..... DD10
L8103 ..... FF13
L8104V EE13
L8105 ..... MM3
L8106 ..... GG15
L8201 ..... KK12
L8202 ..... QQ14
L8203 ..... II14
L8204 ..... KK9
P8001 ..... DD6
P8002 ..... QQ11
P8004 ..... GG11
P8005 ..... GG14
R111 ..... JJ8
R310 ..... II6
R311 ..... KK6
R312P II6
R316 ..... JJ7
R405 ..... JJ4
R408 ..... II5
R409 ..... HH5
R418P GG7
R501 ..... EE5
R502 ..... EE4
R8107 ..... CC7
R8133 ..... DD8
R8137 ..... MM4
R8205U ... RR13
R8241 ..... JJ11
R8250 ..... HH12
R8251 ..... II11
R8252 ..... II11
R8257 ..... KK11
R8321 ..... PP6
R8325 ..... QQ10
R8326 ..... QQ10
R8327 ..... QQ10
R8328 ..... PP9
SF8101V EE9
SF8102V DD9
U8101V ... DD12
U8201V LL13
U8202V ... NN13
U8203V II12
U8204P PP13
U8301V OO7
U8302V QQ8
U8350V LL6
Y501P FF5
Y8101P DD13
Y8201P KK14
Y8301P NN9

D2T2PIP CIRCUIT BOARD (Bottom Side)

C101 ..... K7
C102 ..... K7
C103 ..... K8
C104 ..... J8
C105 ..... J8
C106 ..... J8
C107 ..... I7
C108 ..... J8
C110 ..... I8
C111 ..... I8
C112 ..... J7
C113 ..... I7
C114 ..... I8
C115 ..... G8
C116 ..... G9
C117 ..... K7
C118 ..... H8
C119 ..... G7
C120 ..... G7
C121 ..... G7
C122 ..... G7
C124 ..... K5
C125 ..... K6
C201 ..... K4
C202 ..... J9
C203 ..... I4
C204 ..... I4
C205 ..... D4
C206 ..... D4
C207 ..... D5
C208 ..... D5
C301 ..... J5
C302 ..... K5
C304 ..... K6
C305 ..... J7
C306 ..... J6
C307 ..... J6
C308 ..... I6
C309 ..... I6
C310 ..... I6
C311 ..... I6
C312 ..... H6
C313 ..... G6
C314 ..... G6
C316 ..... I5
C317 ..... J6
C401 ..... K5
C402 ..... J4
C403 ..... G5
C404 ..... G4
C405 ..... J4
C406 ..... J4
C407 ..... K4
C409 ..... J4
C410 ..... I5
C411 ..... K4
C412 ..... I5
C413 ..... H4
C414 ..... K5
C415 ..... H5
C416 ..... H4
C417 ..... H5
C418 ..... H4
C419 ..... H5
C422 ..... G5
C423 ..... J5
C424 ..... I4
C501 ..... G5
C502 ..... D4
C503 ..... D4
C504 ..... G4
C505 ..... F5
C506 ..... F5
C508 ..... D6
C509 ..... D5
C510 ..... D6
C511 ..... J5
C601 ..... F8
C602 ..... F7
C603 ..... D7
C604 ..... F7
C605 ..... G8
C606 ..... D8
C607 ..... F8
C608 ..... E8
C610 ..... D8
C612 ..... E8
C614 ..... E8
C701 ..... E6
C702 ..... E6
C703 ..... E6
C704 ..... E6
C705 ..... E6
C707 ..... E7
C708 ..... E7
C709 ..... E7
C710 ..... E7
C711 ..... E7
C712 ..... E7
C713 ..... E7
C714 ..... E7
C715 ..... D6
C716 ..... G6
C717 ..... G6
C8102 ..... D12
C8103 ..... D12
C8105 ..... F12
C8106 ..... E11
C8107 ..... D13
C8109 ..... D9
C8110 ..... D12
C8112 ..... E14
C8113 ..... E14
C8114 ..... D14
C8116 ..... D15
C8118 ..... D11
C8119 ..... D12
C8122 ..... E11
C8123 ..... E12
C8124 ..... E12
C8201 ..... J14
C8202 ..... J14
C8203 ..... J14
C8204 ..... L12
C8205 ..... L12
C8206 ..... K11
C8207 ..... L12
C8208 ..... L15
C8209 ..... K15
C8210 ..... L14
C8211 ..... L14
C8212 ..... L14
C8213 ..... L14
C8214 ..... K11
C8215 ..... J13
C8216 ..... H10
C8220 ..... H10
C8221 ..... K12
C8222 ..... L13
C8223 ..... L13
C8224 ..... K13
C8225 ..... I14
C8226 ..... I15
C8227 ..... H13
C8228 ..... K11
C8229 ..... I13
C8230 ..... L13
C8231 ..... K10
C8235 ..... I13
C8236 ..... L13
C8237 ..... L12
C8238 ..... L12
C8240 ..... N11
C8242 ..... L12
C8243 ..... J13
C8244 ..... O14
C8245 ..... O12
C8246 ..... O12
C8248 ..... K10
C8249 ..... J10
C8301 ..... O9
C8302 ..... O9
C8303 ..... O7
C8304 ..... Q8
C8305 ..... O6
C8307 ..... Q9
C8308 ..... Q8
C8309 ..... Q9
C8310 ..... P8
C8350 ..... L6
C8351 ..... M6
C8352 ..... L4
C8353 ..... L8
C8354 ..... L8
C8355 ..... L5
C8356 ..... L4
C8360 ..... N6
C8361 ..... N6
C8363 ..... N5
C8364 ..... N5
CR101 ..... K8
CR102 ..... K8
CR103 ..... J8
CR104 ..... J8
CR105 ..... I8
CR106 ..... I8
CR107 ..... H8
CR108 ..... H8
CR109 ..... H7
CR110 ..... G7
CR111 ..... K5
CR112 ..... J7
CR113 ..... K5
CR301 ..... J5
CR303 ..... J6
CR304 ..... I6
CR305 ..... H6
CR306 ..... I5
CR307 ..... J6
CR401 ..... K5
CR402 ..... K4
CR403 ..... I4
CR404 ..... I4
CR405 ..... G8
CR406 ..... H5
CR407 ..... I4
CR408 ..... K5
CR501 ..... G5
CR601 ..... F8
CR602 ..... F8
CR701 ..... E6
CR702 ..... E7
CR703 ..... E7
JC102 ..... D9
JC103 ..... D11
JC104 ..... D13
JC105 ..... F9
JC201 ..... J12
JC301 ..... N8
JC302 ..... Q7
JC351 ..... M6
JC352 ..... D5
JC353 ..... M6
JC354 ..... L5
JC355 ..... L7
JC356 ..... M4
JC357 ..... L8
JC358 ..... M4
JC359 ..... D4
JC360 ..... H3
JC361 ..... K3
JC702 ..... H5
JC703 ..... E4
JC706 ..... H5
JC707 ..... D5
JC711 ..... I8
JC712 ..... E8
JC713 ..... E8
JC714 ..... E8
Q101 ..... I8
Q301 ..... I6
Q401 ..... J4
Q402 ..... H4
Q501 ..... E4
Q502 ..... E5
Q503 ..... E5
Q504 ..... G5
Q505 ..... E4
Q506 ..... F4
Q507 ..... F4
Q508 ..... G4
Q601 ..... E8
Q8101 ..... E15
Q8102 ..... D14
Q8103 ..... D15
Q8104 ..... D15
Q8105 ..... M7
Q8106 ..... E9
Q8201 ..... P11
Q8202 ..... P11
Q8204 ..... I10
Q8205 ..... J10
Q8206 ..... H14
Q8207 ..... G13
Q8208 ..... G12
Q8209 ..... H14
Q8302 ..... Q7
Q8350 ..... M5
Q8351 ..... M5
Q8401 ..... S10
R101 ..... K7
R102 ..... K8
R103 ..... K8
R104 ..... K8
R105 ..... J8
R106 ..... K5
R107 ..... J8
R108 ..... I8
R109 ..... G7
R112 ..... I8
R113 ..... I8
R114 ..... H8
R115 ..... H7
R116 ..... H7
R117 ..... H7
R118 ..... G8
R119 ..... G8
R120 ..... K6
R121 ..... K6
R122 ..... H8
R123 ..... G7
R124 ..... G7
R126 ..... J8
R201 ..... K4
R203 ..... I4
R204 ..... I4
R301 ..... I6
R302 ..... I5
R303 ..... J5
R304 ..... J5
R305 ..... J7
R306 ..... J6
R307 ..... J6
R308 ..... J5
R309 ..... I7
R313 ..... G6
R314 ..... H7
R315 ..... K6
R317 ..... I7
R318 ..... J7
R319 ..... J7
R320 ..... H6
R401 ..... K5
R402 ..... K4
R403 ..... J4
R404 ..... J5
R407 ..... H4
R410 ..... H4
R411 ..... I4
R412 ..... H4
R413 ..... H5
R414 ..... H4
R415 ..... H5
R416 ..... I5
R503 ..... E5
R504 ..... E5
R505 ..... F5
R506 ..... E5
R507 ..... F5
R508 ..... F5
R509 ..... E6
R510 ..... F6
R511 ..... D5
R512 ..... G6
R513 ..... E4
R514 ..... F4

COMPONENT LOCATION GUIDES (Continued)

D2T2PIP CIRCUIT BOARD (Bottom Side - Continued)

R515 ..... G4
R516 ..... G4
R517 ..... G5
R518 ..... J7
R601 ..... G7
R602 ..... F8
R603 ..... F8
R604 ..... E8
R605 ..... F8
R606 ..... D8
R609 ..... F7
R610 ..... E9
R701 ..... E8
R702 ..... F7
R704 ..... E6
R705 ..... D6
R706 ..... E7
R707 ..... D7
R708 ..... E7
R709 ..... D7
R8101 ..... F12
R8102 ..... E11
R8103 ..... F10
R8104 ..... C12
R8105 ..... N8
R8106 ..... N8
R8108 ..... E13
R8109 ..... D10
R8110 ..... E14
R8111 ..... E14
R8112 ..... M8
R8113 ..... D12
R8114 ..... D13
R8115 ..... F11
R8116 ..... N8
R8117 ..... N7
R8118 ..... E14
R8119 ..... E14
R8120 ..... E14
R8121 ..... D14
R8122 ..... D14
R8123 ..... D15
R8124 ..... D15
R8125 ..... D15
R8126 ..... D15
R8127 ..... D14
R8128 ..... D14
R8129 ..... E10
R8130 ..... D14
R8131 ..... E11
R8132 ..... E11
R8134 ..... E9
R8135 ..... I9
R8136 ..... E11
R8138 ..... D9
R8139 ..... E13
R8140 ..... D12
R8201 ..... O11
R8202 ..... P11
R8203 ..... O11
R8204 ..... O11
R8206 ..... J13
R8207 ..... I15
R8208 ..... H14
R8209 ..... J14
R8210 ..... J15
R8211 ..... J14
R8212 ..... J14
R8213 ..... J14
R8214 ..... J14
R8215 ..... K15
R8216 ..... K14
R8217 ..... L14
R8218 ..... L14
R8219 ..... K14
R8220 ..... I10
R8224 ..... I10
R8225 ..... I10
R8226 ..... I10
R8227 ..... I14
R8229 ..... L13
R8230 ..... J10
R8231 ..... J10
R8232 ..... K10
R8233 ..... J10
R8234 ..... I12
R8235 ..... I12
R8236 ..... H13
R8237 ..... H12
R8238 ..... H14
R8239 ..... L13
R8240 ..... J9
R8244 ..... H13
R8245 ..... H12
R8246 ..... H12
R8247 ..... H12
R8248 ..... H12
R8249 ..... H12
R8253 ..... H13
R8254 ..... J15
R8256 ..... M13
R8258 ..... N11
R8260 ..... O13
R8261 ..... O14
R8262 ..... K13
R8301 ..... N9
R8302 ..... O7
R8303 ..... O7
R8304 ..... P7
R8305 ..... P7
R8306 ..... P9
R8307 ..... P9
R8308 ..... N8
R8309 ..... O6
R8310 ..... O6
R8315 ..... P7
R8316 ..... N4
R8317 ..... P7
R8318 ..... P7
R8319 ..... P7
R8320 ..... P6
R8323 ..... P9
R8324 ..... P9
R8329 ..... P10
R8331 ..... O6
R8332 ..... P6
R8350 ..... N7
R8351 ..... M7
R8352 ..... N7
R8353 ..... L7
R8354 ..... N7
R8355 ..... L6
R8356 ..... M4
R8357 ..... M5
R8358 ..... L4
R8359 ..... L5
R8360 ..... L5
R8361 ..... M6
R8362 ..... L5
R8363 ..... L4
R8364 ..... I3
R8365 ..... L8
R8366 ..... L7
R8367 ..... L7
R8368 ..... L8
R8369 ..... I3
R8370 ..... L5
R8371 ..... L5
R8372 ..... L6
R8373 ..... L5
R8374 ..... K3
R8375 ..... N6
R8376 ..... N5
R8377 ..... N6
R8378 ..... N4
R8381 ..... N7
R8382 ..... N6
R8384 ..... N5
R8385 ..... N5
R8401 ..... S11
R8402 ..... S10
U501 ..... F5
U701 ..... F7

DYNAMIC FOCUS CIRCUIT BOARD (Top Side)

C4720K HH4
C4721K HH2
C4722V DD2
C4726K EE7
C4727V CC4
C4730K EE3
CR4703 ..... EE3
CR4704 ..... EE1
CR4720 ..... HH5
CR4721 ..... GG5
CR4726 ..... FF6
CR4727 ..... GG3
E+12V EE7
E+250V EE5
E402 ..... AA5
EDFOUT ... DD7
EGND HH1
EHYOKE ... AA6
ESENSE1 .. HH3
ESENSE2 .. HH2
GNDDFSG . DD6
JW200 ..... GG6
JW201 ..... GG3
JW205 ..... FF3
Q4704 ..... FF4
Q4707 ..... EE4
R4717U FF5
R4722 ..... HH3
R4723 ..... GG2
R4724 ..... EE3
R4726U FF1
R4729 ..... DD4
R4730 ..... EE4
R4731 ..... EE6
R4734U CC7
R4738V BB6
R4740U EE5
R4741 ..... FF4
R4742 ..... FF5
T4701V CC5
U4701V GG5

DYNAMIC FOCUS CIRCUIT BOARD (Bottom Side)

C4724 ..... G6
C4725 ..... F6
C4728 ..... F6
C4729 ..... G2
JC101 ..... G3
JC102 ..... H4
JC103 ..... F4
Q4701 ..... H4
Q4702 ..... H3
Q4703 ..... G3
Q4705 ..... G3
Q4706 ..... F2
R4712 ..... H5
R4715 ..... H5
R4716 ..... H5
R4718 ..... H5
R4719 ..... G6
R4720 ..... G5
R4721 ..... F5
R4725 ..... G4
R4727 ..... G2
R4732 ..... F6
R4733 ..... G6
R4739 ..... G5

IN/OUT CIRCUIT BOARD (Top Side)

C1110 ..... HH6
C1112 ..... JJ3
C1113 ..... II6
C1130 ..... KK3
C1131 ..... II3
C1145 ..... HH7
C1146 ..... II7
C1400 ..... MM19
C1401 ..... OO20
C1404 ..... OO22
C1405 ..... NN21
C1406 ..... OO22
C1407 ..... NN22
C1408 ..... NN20
C1412 ..... MM19
C1445 ..... LL21
C1446 ..... LL21
C1464 ..... LL10
C1465 ..... LL11
C1470K ... OO15
C1471 ..... NN14
C1472 ..... NN14
C1473 ..... MM16
C1474K ... DD20
C1480 ..... OO21
C1532 ..... GG22
C1533 ..... II20
C1534 ..... GG21
C1535 ..... FF21
C1541 ..... II21
C1543 ..... FF20
C1544 ..... FF19
C1557 ..... GG18
C1560 ..... HH19
C1561 ..... HH20
C1562 ..... LL18
C1563 ..... II19
C1701 ..... KK13
C1702 ..... KK14
C1705 ..... KK13
C1706 ..... KK14
C1709 ..... KK16
C1719 ..... KK16
C1721 ..... KK17
C1723 ..... KK18
C1733 ..... HH17
C1740 ..... HH18
C1742 ..... HH17
C1744 ..... HH15
C1746 ..... HH16
C1747 ..... HH16
C1748 ..... HH15
C1750 ..... HH13
C1752 ..... HH14
C1759 ..... II13
C1760 ..... JJ13
C1770 ..... JJ10
C1771 ..... KK10
C1773 ..... JJ6
C1775 ..... JJ9
C1776 ..... KK11
C1777 ..... KK8
C1779 ..... II12
C1784 ..... MM17
C1785 ..... LL16
C1909 ..... BB19
C1910 ..... AA19
C1917 ..... GG5
C1923 ..... EE5
C1940 ..... BB18
C1941 ..... BB17
C1943K ... AA18
C1944 ..... BB15
C1945K ... BB19
C1947 ..... AA17
C1948 ..... CC17
C1949 ..... BB6
C1951K BB5
C1952 ..... BB6
C1953 ..... CC6
C1954K BB4
C1955 ..... BB8
C1956 ..... AA4
C1960 ..... GG12
C1961 ..... GG10
C1962K GG9
C1965 ..... FF13
C1966 ..... FF13
C1967 ..... GG13
C1968 ..... FF10
C1969K ... GG14
C1970K GG8
C2607 ..... GG26
C2611 ..... GG25
C2613 ..... GG23
C6203 ..... NN1
C6501 ..... LL23
C6502 ..... LL24
C6503 ..... KK26
C6504 ..... II21
C6507 ..... JJ22
C6513 ..... LL26
C6514K .. MM14
C6515 ..... II23
C6517 ..... JJ23
CR1412 .... OO13
CR1413 .... NN15
CR1414 .... NN17
CR1415 ... MM17
CR1416 .... EE23
CR1417 ..... GG5
CR1418 ..... GG6
CR1850 ..... EE19
CR1851 .... BB23
CR1903 ..... GG4
CR6203 ..... NN3
CR6204 ..... NN2
CR6501 ..... LL22
CR6502 ..... LL24
CR6503 ..... LL26
CR6504 .... KK23
CR6505 .... NN13
DL2601V .. EE26
E2601 ..... FF26
J1404 ..... MM25
J1404Z MM25
J1405 ..... MM24
J1405Z MM24
J1406 ..... OO25
J1406Z OO25
J1407 ..... OO24
J1407Z OO24
J1410 ..... OO11
J1410Z OO11
J1414 ..... MM11
J1414Z MM11
J1415 ..... MM10
J1415Z MM10
J1417 ..... OO10
J1417Z OO10
J1500 ..... HH27
J1501 ..... JJ27
J1904 ..... FF2
J6202 ..... EE1
J6501 ..... MM23
J6501Z MM23
J6502 ..... OO23
J6502Z OO23
J6503 ..... MM22
J6504 ..... MM12
J6504Z MM13
J6506 ..... LL27
JW101 ..... NN10
JW102 ..... JJ18
JW103 ..... JJ12
JW104 ..... JJ12
JW105 ..... FF21
JW106 ..... LL10
JW107 ..... MM15
JW108 ..... KK16
JW110 ..... NN18
JW111 ..... GG18
JW112 ..... MM18
JW113 ..... HH6
JW114 ..... DD8
JW115 ..... CC22
JW116 ..... MM25
JW117 ..... EE10
JW118 ..... EE9
JW119 ..... NN7
JW120 ..... HH8
JW121 ..... EE17
JW122 ..... NN4
JW123 ..... NN4
JW124 ..... HH16
JW125 ..... KK5
JW126 ..... KK5
JW127 ..... NN6
JW128 ..... NN6
JW129 ..... GG12
JW130 ..... II19
JW131 ..... KK19
JW132 ..... KK19
JW133 ..... DD18
JW134 ..... DD4
JW135 ..... KK23
JW136 ..... LL5
JW137 ..... DD5
JW138 ..... LL5
JW139 ..... CC13
JW140 ..... CC12
JW141 ..... DD4
JW142 ..... DD5
JW143 ..... GG6
JW144 ..... EE6
JW145 ..... DD6
JW147 ..... LL18
JW148 ..... HH26
JW150 ..... EE17
JW151 ..... CC14
JW152 ..... HH7
JW153 ..... JJ6
JW154 ..... EE3
JW155 ..... EE10
JW156 ..... DD5
JW157 ..... II19
JW158 ..... HH7
JW160 ..... KK9
JW161 ..... CC10
JW162 ..... KK8
JW163 ..... CC10
JW164 ..... CC15
JW166 ..... KK27
JW167 ..... EE4
JW168 ..... EE4
JW169 ..... FF3
JW170 ..... FF3
JW171 ..... BB14
JW172 ..... AA14
JW175 ..... KK15
JW176 ..... DD13
JW177 ..... DD14
JW178 ..... NN18
JW179 ..... EE3
JW180 ..... CC15
JW181 ..... CC15
JW182 ..... DD17
JW183 ..... DD18
JW184 ..... DD8
JW185 ..... CC3
JW186 ..... CC3
JW187 ..... FF17
JW188 ..... FF17
JW189 ..... EE24
JW190 ..... LL17
JW191 ..... AA6
JW192 ..... DD6
JW193 ..... EE6
JW194 ..... DD14
JW195 ..... EE15
JW196 ..... GG8
JW197 ..... DD18
JW198 ..... DD19
JW199 ..... DD19
JW200 ..... DD22
JW201 ..... JJ6
JW202 ..... KK23
JW203 ..... MM18
JW204 ..... LL12
JW205 ..... MM18
JW206 ..... LL12
JW207 ..... KK20
JW208 ..... II6
JW209 ..... OO17
JW210 ..... JJ10
JW211 ..... JJ2
JW212 ..... LL4
JW213 ..... GG3
JW214 ..... HH8
JW215 ..... HH9
JW216 ..... OO13
JW217 ..... OO18
JW218 ..... MM13
JW801 ..... JJ23
JW802 ..... II25
JW803 ..... FF23
JW804 ..... FF22
JW805 ..... JJ21
JW806 ..... JJ21
JW807 ..... II24
JW808 ..... GG23
JW809 ..... FF24
JW810 ..... JJ19
JW811 ..... HH22
L1401U EE23
L1402 ..... GG16
L1701U GG16
L1702 ..... LL15
L1703 ..... JJ19
L2601 ..... GG27
L2602 ..... DD26
L2603V DD25
L2603VZ ... DD25
L2604 ..... FF21
L2605 ..... FF24
L2606 ..... GG25
L2607 ..... HH25
L2608 ..... HH26
L2609 ..... EE20
L6501 ..... GG23
L6502 ..... GG22
P1002 ..... FF16
P1003 ..... OO18
P1004 ..... DD23
P1950 ..... EE3
P6201 ..... LL1
P6507 ..... GG24
Q1500 ..... GG21
Q6202 ..... OO3
R1101U KK5
R1130 ..... HH10
R1131 ..... II10
R1133 ..... HH12
R1136 ..... GG16
R1400 ..... NN19
R1403 ..... OO26
R1405 ..... NN24
R1406 ..... MM20
R1408 ..... MM26
R1410 ..... NN23
R1414 ..... OO17
R1416 ..... JJ18
R1422 ..... MM14
R1429 ..... MM11
R1431 ..... MM10
R1432 ..... KK20
R1441U LL20
R1443 ..... KK21
R1446 ..... MM20
R1447 ..... NN18
R1448 ..... KK21
R1459 ..... MM15
R1466 ..... OO14
R1468 ..... NN15
R1481 ..... KK20
R1493 ..... NN11
R1494 ..... OO11
R1522 ..... FF21
R1533 ..... II8
R1534 ..... II9
R1540 ..... EE23
R1550 ..... HH20
R1551 ..... GG18
R1558 ..... EE18
R1721 ..... JJ12
R1729 ..... JJ12
R1733 ..... LL17
R1734 ..... KK18
R1774 ..... KK9
R1780 ..... III1
R1792 ..... LL18
R1882 ..... CC22
R1903 ..... DD2
R1905U DD4
R1907 ..... FF7
R1908U EE5
R1924 ..... CC20
R1925 ..... CC21
R1927 ..... AA21
R1929 ..... EE17
R1938 ..... EE17
R1947U LL6
R1948 ..... FF5
R1949 ..... GG14
R1950 ..... FF5
R1955 ..... GG13
R1956 ..... GG4
R1958 ..... FF8
R1966 ..... AA16
R1967 ..... AA16
R1968 ..... AA15
R1973 ..... BB7
R1974 ..... AA5
R1975 ..... AA7
R1976U ... BB13
R1983 ..... GG11
R1991 ..... CC23
R2601 ..... HH24
R2608V FF26
R2608VZ .. FF26
R2612 ..... HH23
R2620 ..... HH26
R2631 ..... GG27
R2632 ..... HH24
R6206U MM2
R6207 ..... NN3
R6208 ..... LL3
R6209U MM1
R6502 ..... MM23
R6503 ..... LL24
R6505 ..... NN24
R6506 ..... LL24
R6508 ..... JJ26
R6509 ..... KK26
R6510 ..... KK23
R6515 ..... KK22
R6516 ..... KK22
R6521 ..... JJ20
R6522 ..... KK19
R6525 ..... II25
R6526 ..... MM13
R6527 ..... MM12
R6537 ..... II23
R6543 ..... LL24
R6544 ..... LL25
R6546 ..... KK25
SC1900 ..... LL8
SC1904 ..... OO3
SW1900 ..... NN9
SW6201 .... MM2
SW6202 ..... NN2
TP1 ..... JJ15
TP10 ..... KK17
TP11 ..... JJ15
TP12 ..... JJ15
TP13 ..... HH14
TP14 ..... II14
TP15 ..... II14
TP17 ..... GG15
TP18 ..... II17
TP20 ..... JJ16
TP21 ..... JJ16
TP22 ..... KK16
TP23 ..... KK16
TP24 ..... JJ17
TP3 ..... KK13
TP4 ..... JJ17
TP5 ..... KK14
TP6 ..... HH16
TP7 ..... JJ15
TP8 ..... JJ14
TP9 ..... JJ17
U1100V II4
U1108V ... HH11
U1402V ... NN20
U1403V .. MM21
U1404V MM9
U1405V ... NN13
U1406V ... NN16
U1503V JJ8
U1504V ... GG19
U1505V ... HH21
U1700V JJ11
U1702V JJ15
U1710V LL17
U1903V ... BB21
U1910V FF4
U1911V BB7
U1912V ... BB16
U1913 ..... FF11
U2601V FF26
U2602V FF23
U2603V HH24
U6501V JJ25

COMPONENT LOCATION GUIDES (Continued)

IN/OUT CIRCUIT BOARD (Bottom Side)

C1100 ..... I5
C1101 ..... H5
C1102 ..... I5
C1103 ..... H5
C1104 ..... I5
C1105 ..... H5
C1106 ..... I4
C1107 ..... H4
C1108 ..... I4
C1109 ..... I4
C1111 ..... J4
C1114 ..... J5
C1115 ..... J5
C1116 ..... J5
C1117 ..... J5
C1118 ..... J5
C1119 ..... J4
C1120 ..... K4
C1121 ..... K5
C1122 ..... J4
C1123 ..... J4
C1124 ..... J3
C1125 ..... I3
C1428 ..... O19
C1429 ..... O19
C1430 ..... M26
C1431 ..... N22
C1432 ..... O25
C1433 ..... N23
C1434 ..... M20
C1436 ..... M19
C1437 ..... O18
C1440 ..... M21
C1441 ..... N21
C1442 ..... M21
C1443 ..... L21
C1444 ..... M20
C1475 ..... N10
C1476 ..... N13
C1477 ..... O12
C1478 ..... N20
C1479 ..... M27
C1522 ..... J8
C1523 ..... J8
C1525 ..... G21
C1529 ..... I9
C1530 ..... J7
C1531 ..... J7
C1536 ..... J8
C1537 ..... J8
C1538 ..... I8
C1550 ..... G20
C1551 ..... G20
C1552 ..... G19
C1553 ..... G19
C1554 ..... F19
C1555 ..... F19
C1556 ..... F18
C1558 ..... G18
C1559 ..... G19
C1703 ..... J14
C1704 ..... J13
C1707 ..... J14
C1708 ..... J14
C1710 ..... J15
C1711 ..... J15
C1712 ..... J15
C1713 ..... J15
C1714 ..... J16
C1715 ..... J16
C1716 ..... J16
C1717 ..... J16
C1718 ..... J17
C1720 ..... J17
C1722 ..... J17
C1724 ..... J18
C1736 ..... K16
C1737 ..... M17
C1739 ..... I17
C1743 ..... I16
C1745 ..... I16
C1749 ..... I15
C1751 ..... I15
C1755 ..... I14
C1756 ..... I14
C1757 ..... I13
C1758 ..... I13
C1761 ..... K15
C1762 ..... K15
C1763 ..... L15
C1764 ..... K15
C1765 ..... K15
C1766 ..... K15
C1774 ..... J9
C1780 ..... J11
C1781 ..... L16
C1800 ..... B22
C1801 ..... B22
C1907 ..... D2
C1908 ..... E5
C1911 ..... B19
C1914 ..... C21
C1918 ..... F4
C1933 ..... G4
C1942 ..... A16
C1946 ..... B15
C1950 ..... A7
C1963 ..... G11
C1964 ..... G12
C1980 ..... F12
C1981 ..... F12
C1982 ..... B16
C1983 ..... B7
C2601 ..... G27
C2602 ..... G27
C2603 ..... F27
C2604 ..... E25
C2605 ..... F26
C2606 ..... G26
C2609 ..... G23
C2610 ..... F22
C2612 ..... G23
C2614 ..... I26
C2615 ..... G25
C2616 ..... G26
C2617 ..... F24
C2618 ..... H26
C6505 ..... I25
C6508 ..... F22
C6511 ..... J24
C6512 ..... K24
C6516 ..... J23
C6518 ..... J22
C6519 ..... K25
C6520 ..... K25
C6521 ..... I26
C6522 ..... H22
CR1419 ..... O16
CR1420 ..... O16
CR1900 ..... E8
CR1901 ..... G3
CR1906 ..... H2
CR1907 ..... G3
CR1908 ..... G6
CR1909 ..... H3
CR1910 ..... H3
CR1930 ..... F11
CR1931 ..... F11
CR1932 ..... F12
CR1933 ..... F12
JC100 ..... L14
JC101 ..... J9
JC102 ..... I15
JC103 ..... G16
JC104 ..... L13
JC106 ..... B20
JC107 ..... I11
JC108 ..... B17
JC110 ..... G10
JC111 ..... B23
JC112 ..... O12
JC113 ..... J11
JC114 ..... J6
JC115 ..... J27
JC119 ..... O25
JC121 ..... B23
JC126 ..... K14
JC128 ..... N9
JC131 ..... F15
JC132 ..... H3
JC133 ..... J7
JC134 ..... J9
JC135 ..... J9
JC137 ..... H11
JC138 ..... H10
JC801 ..... G25
Q1410 ..... N15
Q1411 ..... O15
Q1412 ..... O14
Q1413 ..... M15
Q1414 ..... M11
Q1415 ..... M11
Q1416 ..... M12
Q1417 ..... M10
Q1418 ..... O16
Q1419 ..... N17
Q1703 ..... L14
Q1704 ..... L15
Q1705 ..... J14
Q1706 ..... K18
Q1801 ..... B22
Q1802 ..... A23
Q1803 ..... A23
Q1804 ..... B23
Q1805 ..... B23
Q1900 ..... B3
Q1901 ..... E8
Q1903 ..... A21
Q1904 ..... A20
Q1906 ..... B13
Q1907 ..... G9
Q1908 ..... A22
Q1910 ..... H2
Q1911 ..... H3
Q1912 ..... G6
Q2601 ..... G26
Q2602 ..... G23
Q2603 ..... I25
Q2604 ..... F25
Q2605 ..... G24
Q6502 ..... J19
Q6503 ..... I23
Q6504 ..... I26
R1100 ..... J6
R1102 ..... I7
R1103 ..... J5
R1104 ..... J5
R1105 ..... J5
R1106 ..... K5
R1107 ..... J4
R1108 ..... K5
R1109 ..... J4
R1110 ..... J4
R1111 ..... J4
R1112 ..... I4
R1113 ..... I3
R1114 ..... H4
R1115 ..... I3
R1116 ..... I3
R1117 ..... H4
R1118 ..... H4
R1119 ..... I4
R1120 ..... I4
R1121 ..... I5
R1122 ..... I5
R1123 ..... I5
R1124 ..... H5
R1125 ..... H5
R1126 ..... H5
R1132 ..... G10
R1134 ..... G12
R1135 ..... H10
R1401 ..... M20
R1402 ..... O19
R1404 ..... L20
R1407 ..... O19
R1409 ..... M26
R1411 ..... N22
R1412 ..... M27
R1413 ..... O25
R1415 ..... N23
R1420 ..... L11
R1421 ..... L10
R1423 ..... O19
R1440 ..... N21
R1442 ..... M21
R1444 ..... M21
R1445 ..... L21
R1451 ..... M8
R1452 ..... M9
R1453 ..... M8
R1454 ..... L8
R1455 ..... L9
R1456 ..... L9
R1457 ..... L9
R1460 ..... M14
R1461 ..... N16
R1462 ..... N16
R1463 ..... M16
R1464 ..... O16
R1465 ..... O15
R1467 ..... N14
R1469 ..... M15
R1470 ..... N9
R1471 ..... O15
R1472 ..... N10
R1473 ..... N11
R1474 ..... N11
R1475 ..... M11
R1476 ..... M9
R1477 ..... N12
R1478 ..... N12
R1479 ..... M10
R1480 ..... O19
R1483 ..... O13
R1484 ..... M15
R1485 ..... N13
R1486 ..... O13
R1487 ..... M9
R1488 ..... O13
R1489 ..... N13
R1490 ..... N12
R1495 ..... N13
R1496 ..... N16
R1497 ..... N17
R1498 ..... N17
R1499 ..... M27
R1512 ..... I21
R1513 ..... H21
R1514 ..... I21
R1515 ..... I21
R1521 ..... G20
R1523 ..... I21
R1528 ..... H21
R1531 ..... I9
R1532 ..... I9
R1535 ..... E21
R1536 ..... E23
R1538 ..... J8
R1539 ..... F19
R1541 ..... G21
R1542 ..... G22
R1543 ..... J7
R1552 ..... G20
R1553 ..... G19
R1554 ..... G18
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R1556 ..... G18
R1557 ..... G18
R1559 ..... G18
R1701 ..... K18
R1705 ..... J18
R1706 ..... J15
R1708 ..... K13
R1709 ..... K14
R1710 ..... J14
R1711 ..... J17
R1712 ..... K16
R1713 ..... K17
R1714 ..... J17
R1715 ..... J17
R1716 ..... K15
R1717 ..... K14
R1718 ..... L15
R1719 ..... J12
R1720 ..... J12
R1722 ..... J10
R1724 ..... K16
R1726 ..... K15
R1728 ..... M17
R1730 ..... J12
R1732 ..... K17
R1735 ..... I17
R1736 ..... K16
R1738 ..... J14
R1739 ..... H17
R1740 ..... H17
R1741 ..... I13
R1742 ..... H17
R1743 ..... I14
R1744 ..... I14
R1745 ..... J10
R1746 ..... I13
R1747 ..... I16
R1748 ..... I16
R1749 ..... K17
R1755 ..... I17
R1757 ..... L14
R1758 ..... H16
R1759 ..... H15
R1760 ..... I15
R1761 ..... I15
R1762 ..... K12
R1763 ..... J12
R1764 ..... L16
R1767 ..... K9
R1768 ..... K15
R1769 ..... L16
R1770 ..... H16
R1771 ..... J11
R1772 ..... K10
R1773 ..... K10
R1775 ..... K11
R1776 ..... K11
R1777 ..... K11
R1778 ..... H15
R1779 ..... K11
R1781 ..... J11
R1782 ..... J11
R1783 ..... H15
R1784 ..... J11
R1785 ..... J11
R1786 ..... H14
R1787 ..... L17
R1788 ..... K16
R1789 ..... K11
R1790 ..... K11
R1791 ..... J10
R1875 ..... D20
R1876 ..... B22
R1877 ..... C22
R1878 ..... A22
R1879 ..... A22
R1880 ..... A23
R1881 ..... A23
R1883 ..... B23
R1884 ..... B22
R1885 ..... B23
R1886 ..... B23
R1887 ..... B23
R1888 ..... C22
R1902 ..... F4
R1904 ..... E22
R1906 ..... E8
R1909 ..... G3
R1910 ..... G3
R1911 ..... F5
R1912 ..... F5
R1913 ..... E8
R1914 ..... F4
R1915 ..... F4
R1916 ..... G4
R1926 ..... B21
R1928 ..... B22
R1931 ..... A21
R1934 ..... A21
R1935 ..... B20
R1937 ..... C21
R1940 ..... A21
R1941 ..... C21
R1942 ..... G4
R1943 ..... B3
R1944 ..... E8
R1946 ..... A20
R1951 ..... G11
R1952 ..... G11
R1953 ..... F15
R1954 ..... G14
R1957 ..... E12
R1959 ..... F15
R1960 ..... B15
R1961 ..... B8
R1962 ..... A16
R1963 ..... B16
R1964 ..... B17
R1965 ..... A16
R1969 ..... A7
R1970 ..... A7
R1971 ..... A7
R1972 ..... B7
R1977 ..... C14
R1978 ..... C14
R1979 ..... D21
R1980 ..... G9
R1981 ..... H8
R1982 ..... F3
R1984 ..... F4
R1985 ..... C14
R1986 ..... F12
R1987 ..... G13
R1988 ..... B3
R1992 ..... H3
R1993 ..... H2
R1994 ..... G6
R1995 ..... H2
R1996 ..... H3
R2602 ..... G26
R2603 ..... G27
R2604 ..... F27
R2605 ..... E27
R2606 ..... E25
R2607 ..... E25
R2609 ..... F26
R2610 ..... G25
R2611 ..... H26
R2613 ..... F22
R2614 ..... F22
R2615 ..... G24
R2616 ..... G26
R2617 ..... G25
R2618 ..... F25
R2619 ..... G24
R2621 ..... I25
R2622 ..... F24
R2623 ..... F23
R2624 ..... I25
R2626 ..... H24
R2627 ..... G26
R2628 ..... F25
R2629 ..... I25
R2630 ..... G24
R6204 ..... N3
R6205 ..... K1
R6501 ..... M23
R6504 ..... O23
R6507 ..... I27
R6511 ..... M21
R6513 ..... M22
R6523 ..... I24
R6524 ..... I24
R6528 ..... J26
R6529 ..... I25
R6531 ..... J26
R6532 ..... J25
R6533 ..... J25
R6535 ..... I24
R6536 ..... H24
R6538 ..... K25
R6539 ..... K25
R6540 ..... J24
R6541 ..... K24
R6545 ..... L26
R6548 ..... H22

MAIN CIRCUIT BOARD (Top Side)

C1601 ..... TT22
C1602 ..... SS23
C1603 ..... TT24
C1604 ..... TT22
C1605 ..... TT23
C1606 ..... SS22
C1607 ..... VV22
C1608 ..... SS24
C1609 ..... UU25
C1610 ..... VV25
C1611 ..... VV25
C1612 ..... VV24
C1613 ..... VV24
C1614 ..... VV23
C1615 ..... SS22
C1616 ..... UU22
C1619 ..... TT25
C2203 ..... NN22
C2303 ..... LL21
C2308 ..... LL23
C2309 ..... OO22
C2311 ..... KK24
C2313 ..... KK24
C2317 ..... NN23
C2502 ..... TT29
C2505 ..... TT30
C2509 ..... RR28
C2512 ..... TT27
C2528 ..... QQ27
C2529 ..... RR29
C2703 ..... OO28
C2704 ..... NN25
C2706 ..... MM27
C2707 ..... QQ26
C2709 ..... MM28
C2711 ..... PP24
C2751 ..... II27
C2753 ..... OO27
C2754 ..... PP26
C2755 ..... NN26
C2756 ..... II27
C2805 ..... PP23
C2808 ..... KK25
C2907 ..... RR24
C3100 ..... FF19
C3112 ..... GG21
C3302 ..... NN28
C3304 ..... NN30
C3306 ..... NN30
C3309 ..... FF20
C4001K TT6
C4002K ... UU14
C4003 ..... SS13
C4004 ..... RR12
C4006K PP13
C4007AK .. LL14
C4007BK .. LL14
C4008 ..... RR11
C4009 ..... SS10
C4011K TT12
C4101 ..... QQ8
C4102 ..... PP8
C4105 ..... OO7
C4106 ..... NN9
C4108 ..... NN8
C4111K ... GG14
C4112K ... GG13
C4115K ... GG12
C4116 ..... CC13
C4117 ..... DD13
C4119 ..... GG10
C4120K FF9
C4121K HH9
C4122 ..... KK26
C4125K II9
C4126K .. MM13
C4127K .. MM12
C4129 ..... DD12
C4130K ... CC14
C4131 ..... KK27
C4132K II9
C4134K ... GG11
C4136 ..... CC16
C4137 ..... DD16
C4138 ..... DD16
C4139 ..... CC17
C4143K EE15
C4145K FF10
C4147K ... NN13
C4190 ..... II26
C4194 ..... MM18
C4195P ... MM17
C4196 ..... LL16
C4197 ..... LL16
C4198 ..... MM8
C4201 ..... QQ4
C4302K CC6
C4303 ..... CC5
C4305P DD5
C4308 ..... DD6
C4354 ..... LL26
C4402K II4
C4403P FF4
C4405P CC4
C4406 ..... DD1
C4407P FF1
C4408K BB5
C4409 ..... FF8
C4410 ..... EE2
C4411K KK1
C4412K MM1
C4413 ..... TT1
C4414 ..... VV2
C4415K FF2
C4416K CC4
C4418P CC6
C4419 ..... CC7
C4502K ... CC29
C4504 ..... CC24
C4505 ..... BB24
C4506K ... CC26
C4551 ..... JJ25
C4552 ..... JJ26
C4606K ... NN15
C4613K II14
C4701K NN3
C4702K PP2
C4720K RR2
C4723 ..... TT3
C4759K OO4
C4760 ..... GG28
C4806 ..... AA8
C4807 ..... BB7
C4809 ..... AA9
C4810 ..... CC9
C4901 ..... QQ4
C4902 ..... PP5
C507 ..... OO18
CF2201V ... NN23
CR1601 ..... SS25
CR2501 ..... JJ30
CR2751 ..... II27
CR3101 .... KK14
CR3104 .... KK15
CR3108 ..... FF25
CR3111 .... GG25
CR3307 .... DD14
CR3400 ..... TT26
CR3401 ..... TT26
CR4001V .. SS12
CR4101 ..... QQ8
CR4102 .... DD10
CR4103 ..... PP9
CR4105 ..... KK8
CR4106 ..... KK8
CR4107P ... HH13
CR4108P ... HH13
CR4109P ... HH12
CR4110P II9
CR4111P ... GG10
CR4112 .... CC13
CR4113 .... BB13
CR4114 ..... JJ27
CR4115P ... HH11
CR4116P ... NN13
CR4117 .... BB16
CR4118 .... DD15
CR4119 .... DD16
CR4120 .... DD17
CR4121 .... CC18
CR4126 ..... FF15
CR4128P ... HH11
CR4129 ..... EE13
CR4130 ..... EE14
CR4131 ...MM11
CR4132 ..... NN8
CR4133 ..... OO9
CR4201 ..... RR4
CR4303 ..... DD5
CR4351 .... KK27
CR4401F FF3
CR4402P ... CC3
CR4403 ..... UU1
CR4404 ..... UU1
CR4405 ..... FF8
CR4406 ..... GG5
CR4408 ..... HH1
CR4501 .... CC25
CR4502 .... CC29
CR4601 ..... PP15
CR4602 ..... PP15
CR4603 .... QQ15
CR4604 .... QQ15
CR4605 ..... JJ14
CR4611 ..... JJ14
CR4612 ..... II15
CR4701P ... NN2
CR4720 ..... PP2
CR4721 ..... SS2
CR4722 ..... SS3
CR4723 ..... SS2
CR4801 ..... BB7
CR4802 .... CC10
CR4803 .... BB10
CR4804 ..... AA8
CR4901 ..... PP5
CR4902 ..... FF27
CR4903 .... GG28
DL2501K .. PP30
E+12DYF .. CC14
E+250V OO2
E-12VR FF15
E302B CC31
E304B KK28
E4001 ..... VV11
E4002 ..... VV13
E4003 ..... RR13
E4004 ..... PP11
E4005 ..... RR13
E4006 ..... QQ11
E4201 ..... SS5
E4202 ..... SS10
E4401 ..... GG2
E4402 ..... GG1
E4403 ..... DD2
E4501 ..... DD28
E4502 ..... DD26
E4720 ..... PP2
E4721 ..... TT4
E501A RR30
E501B DD7
E702 ..... UU20
E703 ..... UU21
ECHASA ... GG3
EFILAUD ... PP5
EGNDA CC5
EGNDAUD ... OO3
EGNDIO ... QQ26
EGNDIO2 ... UU21
EGNDPIP ... RR26
EK5008A JJ8
EK5024A JJ8
EKS250V ... OO3
EKS5001 ... OO2
EKS5007 .... PP4
EKS5008 .... PP3
ESENSE1 .... DD27
ESENSE2 .. CC27

COMPONENT LOCATION GUIDES (Continued)

MAIN CIRCUIT BOARD (Top Side - Continued)

EVRTPUL .. DD24
F4001V VV9
FB3101 ..... II18
FB4101 .... NN12
FB4102 .... NN13
FB4103P .. OO12
FB4104 ..... II13
FB4105 .... HH13
FB4106 ..... II13
FB4107 .... HH13
FB4108 ..... II12
FB4109 .... HH12
FB4110 ..... II11
FB4111 .... HH11
FB4112 ..... II10
FB4113 ..... II8
FB4114 .... HH10
FB4115 .... GG10
FB4116 ..... MM8
FB4401P II5
FB4591 .... HH26
FB4701 ..... OO2
FB4702 ..... NN2
FL101K TT18
J2001 ..... BB31
J2003 ..... VV22
J2004 ..... QQ27
J3001 ..... DD22
J3002 ..... HH30
J3004 ..... EE29
J3104 ..... BB20
J3400 ..... UU26
J4102 ..... HH15
J4105 ..... FF13
J4701 ..... VV4
J801 ..... VV20
J802 ..... VV19
JW201 ..... MM22
JW202 ..... PP4
JW203 ..... VV30
JW204 ..... RR29
JW205 ..... UU30
JW206 ..... NN24
JW207 ..... BB8
JW209 ..... QQ28
JW210 ..... VV26
JW211 ..... RR28
JW212 ..... QQ30
JW213 ..... OO31
JW214 ..... JJ31
JW215 ..... TT27
JW216 ..... UU27
JW217 ..... SS30
JW218 ..... UU26
JW219 ..... II31
JW220 ..... GG29
JW221 ..... RR26
JW222 ..... GG31
JW223 ..... FF31
JW224 ..... MM27
JW225 ..... KK26
JW226 ..... EE31
JW227 ..... EE26
JW228 ..... DD31
JW229 ..... HH28
JW230 ..... HH27
JW231 ..... EE27
JW232 ..... CC27
JW233 ..... BB23
JW234 ..... GG29
JW235 ..... SS26
JW236 ..... CC31
JW237 ..... EE24
JW238 ..... SS25
JW239 ..... FF29
JW240 ..... KK29
JW241 ..... BB31
JW242 ..... DD31
JW243 ..... JJ29
JW244 ..... MM27
JW245 ..... NN24
JW246 ..... KK28
JW247 ..... FF31
JW248 ..... QQ24
JW250 ..... GG31
JW251 ..... GG29
JW252 ..... II31
JW253 ..... HH28
JW254 ..... HH29
JW255 ..... MM30
JW256 ..... II29
JW257 ..... EE30
JW260 ..... FF31
JW261 ..... MM22
JW262 ..... QQ30
JW263 ..... II27
JW264 ..... JJ25
JW265 ..... HH26
JW267 ..... II31
JW268 ..... FF29
JW269 ..... OO29
JW270 ..... PP28
JW271 ..... PP25
JW272 ..... QQ24
JW273 ..... QQ26
JW274 ..... PP24
JW276 ..... MM23
JW277 ..... SS26
JW278 ..... HH29
JW280 ..... PP25
JW282 ..... OO25
JW283 ..... II29
JW285 ..... HH31
JW288 ..... QQ29
JW289 ..... QQ29
JW290 ..... NN27
JW291 ..... PP31
JW301 ..... LL18
JW302 ..... LL19
JW303 ..... EE20
JW304 ..... EE22
JW305 ..... LL18
JW306 ..... EE18
JW307 ..... EE20
JW308 ..... EE26
JW309 ..... HH26
JW310 ..... KK17
JW311 ..... KK19
JW312 ..... MM29
JW313 ..... EE22
JW314 ..... JJ19
JW315 ..... MM29
JW316 ..... FF16
JW317 ..... EE23
JW318 ..... JJ17
JW319 ..... JJ20
JW320 ..... JJ18
JW321 ..... FF24
JW322 ..... II29
JW323 ..... II24
JW324 ..... II22
JW325 ..... II24
JW326 ..... II22
JW328 ..... HH24
JW329 ..... EE20
JW330 ..... II16
JW331 ..... EE18
JW332 ..... GG24
JW333 ..... HH24
JW334 ..... BB22
JW335 ..... BB22
JW336 ..... DD21
JW337 ..... GG18
JW338 ..... DD23
JW339 ..... II19
JW340 ..... HH24
JW341 ..... EE23
JW342 ..... FF24
JW343 ..... EE25
JW344 ..... EE23
JW345 ..... CC20
JW346 ..... FF26
JW349 ..... FF24
JW350 ..... EE24
JW353 ..... EE27
JW354 ..... CC22
JW355 ..... FF30
JW356 ..... DD19
JW357 ..... CC21
JW358 ..... BB22
JW359 ..... CC22
JW360 ..... JJ18
JW361 ..... JJ19
JW362 ..... II17
JW363 ..... HH17
JW364 ..... FF17
JW365 ..... EE18
JW366 ..... HH23
JW367 ..... HH22
JW401 ..... KK7
JW402 ..... MM9
JW403 ..... MM15
JW404P ... NN12
JW405P II5
JW406 ..... OO13
JW407 ..... KK8
JW408 ..... II7
JW409 ..... II7
JW410 ..... JJ7
JW411 ..... JJ7
JW412 ..... DD8
JW413 ..... EE14
JW414 ..... DD7
JW416 ..... EE11
JW417 ..... DD12
JW418 ..... EE13
JW419 ..... DD9
JW420 ..... EE16
JW421 ..... DD12
JW422 ..... DD10
JW423 ..... JJ13
JW425 ..... II16
JW426 ..... II16
JW427 ..... II16
JW429 ..... LL16
JW430 ..... HH16
JW431 ..... EE16
JW433 ..... BB19
JW434 ..... BB16
JW436 ..... BB14
JW438 ..... BB12
JW445 ..... DD10
JW448 ..... LL28
JW449 ..... QQ15
JW450 ..... MM15
JW452 ..... AA11
JW454 ..... DD12
JW455 ..... EE16
JW457 ..... GG15
JW458 ..... BB12
JW459 ..... HH14
JW460 ..... BB23
JW461 ..... BB27
JW462 ..... JJ14
JW463 ..... JJ16
JW464 ..... JJ13
JW465 ..... GG15
JW466 ..... JJ16
JW468 ..... EE27
JW470 ..... EE14
JW471 ..... KK16
JW472 ..... QQ2
JW473 ..... SS10
JW474 ..... SS10
JW475 ..... TT10
JW476 ..... UU10
JW490 ..... JJ25
JW701 ..... NN16
JW702 ..... PP17
JW704P ... VV20
JW706P SS18
K4201V RR5
L101 ..... TT19
L102 ..... TT20
L103 ..... TT20
L104 ..... SS20
L105 ..... SS21
L106 ..... RR20
L107 ..... QQ20
L108 ..... QQ21
L109 ..... QQ20
L110 ..... QQ21
L111 ..... QQ21
L112 ..... QQ20
L113 ..... PP20
L114 ..... PP21
L115 ..... PP20
L2201V LL21
L2301 ..... LL22
L2302V NN22
L2303P KK23
L2304P JJ23
L2305 ..... OO24
L2501U LL30
L2502 ..... VV31
L2503 ..... TT29
L2504 ..... SS28
L2505 ..... VV28
L2506 ..... SS30
L2507 ..... TT30
L2508 ..... QQ29
L2701 ..... LL28
L2702 ..... QQ26
L2705 ..... OO23
L2802 ..... PP22
L2901 ..... OO25
L2902 ..... QQ25
L2903 ..... PP25
L2904 ..... SS27
L301 ..... SS18
L302 ..... SS19
L303 ..... RR18
L304 ..... RR18
L305 ..... QQ18
L306 ..... QQ18
L307 ..... QQ19
L308 ..... SS18
L3101 ..... FF22
L3301 ..... GG22
L3302 ..... GG22
L3303 ..... FF22
L3304 ..... HH21
L4001V TT8
L4002V TT10
L402 ..... TT17
L403 ..... SS16
L404 ..... RR17
L405 ..... RR17
L407 ..... QQ17
L409 ..... QQ16
L4101 ..... LL16
L4102 ..... LL17
L4103 ..... LL17
L4104 ..... KK15
L4105 ..... BB18
L4106 ..... HH31
L4401V GG6
L4402V CC2
L4403V BB1
L4404V BB7
L4405V II2
L601 ..... OO20
L602 ..... OO20
L603 ..... OO21
L604 ..... NN20
L701 ..... NN18
L702 ..... NN18
L703 ..... NN19
L704 ..... NN19
L801 ..... UU17
P2501 ..... PP29
P2502 ..... JJ30
P2901 ..... SS23
P3010 ..... EE29
P3101 ..... FF24
P3105 ..... NN29
P4201 ..... EE9
Q4101F OO11
Q4102 ..... LL8
Q4103 ..... LL9
Q4104 ..... CC15
Q4105 ..... JJ27
Q4106 ..... CC12
Q4107 ..... CC17
Q4109 ..... OO10
Q4110P NN8
Q4201 ..... QQ5
Q4301 ..... CC6
Q4302 ..... DD5
Q4401F HH5
Q4502 ..... CC29
Q4603 ..... II14
Q4720F RR2
Q4724F RR2
Q4801F BB8
Q4802 ..... BB9
Q4902 ..... FF28
R111 ..... SS21
R1609 ..... TT26
R1613U TT24
R2515 ..... QQ31
R2545 ..... PP31
R2555 ..... LL30
R2556 ..... KK30
R2557 ..... KK30
R2560U ... KK30
R2568 ..... MM31
R2583 ..... JJ17
R2593 ..... SS29
R2597 ..... RR28
R2705 ..... LL28
R2707 ..... OO27
R2712 ..... OO24
R2713 ..... OO24
R2717 ..... OO27
R2718 ..... PP27
R2812 ..... PP26
R2902 ..... NN25
R2904 ..... RR24
R2909 ..... NN26
R2916 ..... NN26
R310 ..... RR18
R3102 ..... FF22
R311 ..... TT18
R3112 ..... KK14
R3117 ..... LL20
R312P RR19
R3133 ..... HH28
R3144 ..... EE26
R3147 ..... HH24
R316 ..... SS19
R3304 ..... NN28
R3308 ..... NN30
R3319 ..... FF23
R3321 ..... EE19
R3325 ..... II22
R3332 ..... GG24
R3401 ..... UU26
R3403 ..... TT26
R3827 ..... JJ21
R3829 ..... JJ21
R4001V ... UU12
R4002 ..... VV14
R4003U ... QQ12
R405 ..... SS17
R408 ..... RR17
R409 ..... QQ17
R4100 ..... OO10
R4101 ..... QQ10
R4103U ... OO10
R4104 ..... PP7
R4106 ..... OO7
R4107 ..... OO7
R4111 ..... PP8
R4112 ..... PP7
R4113VZ PP6
R4114 ..... KK9
R4117 ..... LL8
R4120 ..... KK8
R4121 ..... CC15
R4122V EE11
R4124 ..... JJ26
R4126 ..... JJ27
R4127 ..... JJ28
R4128 ..... JJ28
R4129V ... OO12
R4130 ..... DD15
R4131 ..... DD17
R4132U FF13
R4133 ..... PP8
R4137U ... DD11
R4138 ..... CC12
R4140 ..... DD15
R4141 ..... HH14
R418P PP19
R4190 ..... BB18
R4191 ..... BB18
R4195 ..... NN10
R4199 ..... MM20
R4304 ..... DD7
R4305 ..... CC5
R4307U DD8
R4308 ..... DD6
R4401 ..... GG5
R4402VZ ... VV2
R4403 ..... DD3
R4404U GG6
R4407U HH1
R4409 ..... DD8
R4410 ..... CC7
R4415 ..... BB6
R4416 ..... DD7
R4501U ... DD26
R4502U ... CC28
R4505 ..... BB24
R4507 ..... CC25
R4508U ... BB22
R4509U ... BB23
R4510 ..... BB23
R4511U ... BB12
R4512 ..... DD29
R4516 ..... CC26
R4518U ... CC28
R4519U ... CC28
R4609 ..... JJ14
R4610 ..... II15
R4703U OO5
R4720 ..... QQ2
R4721 ..... TT3
R4722 ..... QQ3
R4725 ..... RR3
R4726 ..... RR3
R4730 ..... SS3
R4734 ..... TT4
R4735 ..... SS3
R4737 ..... QQ3
R4738 ..... SS2
R4785U OO4
R4788 ..... GG27
R4789 ..... HH25
R4790U NN6
R4791 ..... LL28
R4793U OO5
R4795 ..... BB6
R4805 ..... BB11
R4806 ..... BB10
R4810U BB7
R4812U DD9
R4813 ..... BB9
R4814U DD9
R4817 ..... DD9
R4851 ..... HH25
R4901 ..... PP4
R4903 ..... PP5
R4905 ..... FF28
R4907 ..... FF28
R4912VZ .. FF27
R501 ..... NN17
R502 ..... NN17
REGB+\0 .... FF8
REGB+\1 ... GG8
REGB+\2 ... GG8
RN4501 ... CC27
RT4201K ... RR7
SF2301V .. KK22
SF2302V JJ22
SW4401V .. VV3
SW801 ..... VV20
T4101V KK11
T4102V QQ9
T4103V ... MM10
T4301V FF6
T4401 ..... LL5
T4601V SS14
T801 ..... UU20
TP112 ..... SS21
TP116 ..... MM21
TP130 ..... OO28
TP132 ..... UU23
TP133 ..... UU23
TP140 ..... PP27
TP141 ..... PP26
TP150 ..... LL24
TP2202 .... NN27
TP2301 ..... LL24
TP2302 ... MM27
TP2303 .... NN23
TP2306 ..... LL24
TP4004 ..... QQ12
TP4005 ..... PP12
TP4101 ..... FF15
TP4102 ..... DD14
TP4103 ..... EE14
TP4104 .... HH11
TP4105 ..... AA16
TP4106 .... AA14
TP4107 .... DD17
TP4108 .... KK28
TP4109 .... HH11
TP4110 .... DD12
TP4111 ..... II8
TP4112 .... GG10
TP4113 .... HH13
TP4114 ..... JJ8
TP4115 .... HH13
TP4302 ..... EE6
TP4501 ..... DD27
TP4503 .... DD28
TP4602 ..... II15
TP4603 ..... II15
TP4703 ..... JJ7
TP4704 ..... PP4
U1600V ... UU24
U2001V .. MM24
U2501V ... UU29
U2502V LL31
U3101V ... HH19
U3102V FF21
U3103V ... GG25
U3801V ... KK19
U4101V OO8
U4102F FF15
U4501 ..... BB25
U4601F OO15
U4801V ... AA10
Y2801P LL24
Y3101P II18
Y4190P LL25
Y501P OO17

MAIN CIRCUIT BOARD (Bottom Side)

C101 ..... T19
C102 ..... T19
C103 ..... T21
C104 ..... S21
C105 ..... S20
C106 ..... S21
C107 ..... R20
C108 ..... S20
C110 ..... R20
C111 ..... R21
C112 ..... S20
C113 ..... R19
C114 ..... R21
C115 ..... P20
C116 ..... P21
C117 ..... T20
C118 ..... Q20
C119 ..... P19
C120 ..... P19
C121 ..... P19
C122 ..... P19
C124 ..... T18
C125 ..... T19
C1620 ..... U25
C1621 ..... T22
C1622 ..... T22
C201 ..... T16
C202 ..... S21
C203 ..... R16
C204 ..... R16
C205 ..... M16
C206 ..... M16
C207 ..... M17
C208 ..... M17
C2201 ..... L22
C2202 ..... L22
C2302 ..... L21
C2304 ..... M23
C2305 ..... M24
C2306 ..... L23
C2307 ..... M23
C2310 ..... O22
C2312 ..... M24
C2314 ..... L23
C2315 ..... K24
C2316 ..... M23
C2501 ..... U29
C2503 ..... U31
C2504 ..... U30
C2506 ..... S31
C2507 ..... T32
C2508 ..... U30
C2510 ..... T27
C2511 ..... U27
C2513 ..... V27
C2514 ..... U29
C2515 ..... T29
C2516 ..... T30
C2517 ..... V30
C2518 ..... T28
C2519 ..... S28
C2520 ..... S28
C2521 ..... U28
C2522 ..... V28
C2523 ..... V29
C2524 ..... V29
C2525 ..... V29
C2526 ..... U28
C2527 ..... U29
C2530 ..... S28
C2532 ..... K31
C2533 ..... J31
C2534 ..... V29
C2535 ..... K30
C2536 ..... K30
C2538 ..... U28
C2539 ..... Q29
C2540 ..... P30
C2541 ..... S29
C2542 ..... P29
C2544 ..... R23
C2701 ..... M22
C2702 ..... M24
C2708 ..... M24
C2712 ..... M25
C2713 ..... M27
C2714 ..... M25
C2715 ..... P23
C2716 ..... O27
C2717 ..... P26
C2801 ..... P22
C2802 ..... N24
C2803 ..... M24
C2804 ..... K24
C2806 ..... P23
C2807 ..... M24
C2809 ..... Q22
C2901 ..... P24
C2902 ..... O25
C2903 ..... R25
C2904 ..... Q25
C2905 ..... P25
C2906 ..... P25
C301 ..... S17
C302 ..... T18
C304 ..... T19
C305 ..... S19
C306 ..... S18
C307 ..... S18
C308 ..... R18
C309 ..... R19
C310 ..... R18
C3101 ..... E21
C3102 ..... E21
C3103 ..... H23
C3104 ..... F21
C3106 ..... G18
C3107 ..... H18
C3108 ..... H18
C3109 ..... H20
C311 ..... R19
C3110 ..... H20
C3111 ..... G21
C3113 ..... I18
C3114 ..... F20
C3117 ..... H17
C3119 ..... J23
C312 ..... Q18
C3120 ..... H18
C3121 ..... I23
C3122 ..... I22
C313 ..... P19
C314 ..... P19
C316 ..... R18
C317 ..... S18
C3201 ..... F19
C3202 ..... E19
C3203 ..... E18
C3204 ..... F19
C3205 ..... F19
C3301 ..... G22
C3303 ..... G21
C3305 ..... G21
C3307 ..... I23
C3311 ..... J23
C3312 ..... F26
C3314 ..... I20
C3315 ..... I20
C3317 ..... H22
C3321 ..... I19
C3322 ..... J17
C3323 ..... G23
C3324 ..... G23
C3325 ..... F23
C3326 ..... H22
C3400 ..... T26
C3401 ..... U26
C3501 ..... F17
C3502 ..... F18
C3503 ..... E18
C3504 ..... F17
C3505 ..... F18
C3506 ..... E18
C3801 ..... K20
C3802 ..... L19
C3803 ..... K20
C3804 ..... L19
C3805 ..... L18
C3806 ..... L19
C3807 ..... K19
C3808 ..... J20
C3809 ..... J20
C401 ..... T17
C402 ..... S16
C403 ..... P17
C404 ..... P17
C405 ..... S17
C406 ..... S16
C407 ..... T16
C409 ..... S17
C410 ..... R17
C4103 ..... N8
C4104 ..... N7
C4107 ..... P8
C4109 ..... O8
C411 ..... T17
C4110 ..... H13
C4113 ..... H13
C4114 ..... J13
C4118 ..... H12
C412 ..... R17
C4123 ..... Q10

COMPONENT LOCATION GUIDES (Continued)

MAIN CIRCUIT BOARD (Bottom Side - Continued)

C4124 ..... O8
C4128 ..... H11
C413 ..... Q17
C4133 ..... H11
C4135 ..... B16
C414 ..... T17
C4140 ..... D17
C4141 ..... F15
C4142 ..... H12
C4146 ..... H11
C4148 ..... M9
C415 ..... Q17
C416 ..... Q16
C417 ..... Q17
C418 ..... Q17
C419 ..... Q17
C4191 ..... M24
C4193 ..... M25
C4199 ..... N8
C4202 ..... R5
C422 ..... P17
C423 ..... S17
C424 ..... R16
C4301 ..... J22
C4304 ..... D5
C4306 ..... E5
C4307 ..... C5
C4309 ..... G5
C4310 ..... B9
C4352 ..... K26
C4353 ..... M26
C4507 ..... B26
C4601 ..... P15
C4602 ..... P15
C4603 ..... Q15
C4604 ..... Q15
C4607 ..... I15
C4611 ..... I14
C4612 ..... O15
C4721 ..... T3
C4722 ..... R3
C4802 ..... A10
C4803 ..... B9
C4805 ..... B9
C4808 ..... C8
C4811 ..... B7
C4812 ..... A10
C4904 ..... L27
C4906 ..... M26
C4907 ..... G28
C501 ..... P17
C502 ..... M17
C503 ..... M17
C504 ..... P16
C505 ..... O17
C506 ..... O18
C508 ..... M19
C509 ..... M17
C510 ..... M18
C511 ..... S18
C601 ..... O20
C602 ..... O20
C603 ..... M20
C604 ..... O20
C605 ..... P21
C606 ..... M20
C607 ..... O20
C608 ..... N21
C610 ..... M21
C612 ..... N21
C614 ..... N20
C701 ..... N18
C702 ..... N18
C703 ..... N19
C704 ..... N19
C705 ..... N19
C707 ..... N19
C708 ..... N20
C709 ..... N19
C710 ..... N19
C711 ..... N19
C712 ..... N19
C713 ..... N20
C714 ..... N19
C715 ..... M18
C716 ..... P18
C717 ..... P18
C803 ..... U19
C805 ..... U16
C806 ..... U16
C807 ..... V17
C808 ..... U20
C809 ..... U18
CR101 ..... T20
CR102 ..... T20
CR103 ..... S21
CR104 ..... S20
CR105 ..... R20
CR106 ..... R21
CR107 ..... Q20
CR108 ..... Q20
CR109 ..... Q19
CR110 ..... P20
CR111 ..... T17
CR112 ..... S19
CR113 ..... T18
CR2201 ..... M22
CR2752 ..... L27
CR301 ..... S18
CR303 ..... S19
CR304 ..... R19
CR305 ..... Q19
CR306 ..... R18
CR307 ..... S19
CR3102 ..... C20
CR3103 ..... C20
CR3105 ..... L28
CR3106 ..... L28
CR3107 ..... L28
CR3109 ..... E25
CR3110 ..... G26
CR3301 ..... I20
CR3302 ..... H22
CR3306 ..... G22
CR3308 ..... C15
CR3501 ..... F18
CR401 ..... T17
CR402 ..... T17
CR403 ..... R17
CR404 ..... R17
CR405 ..... P20
CR406 ..... Q17
CR407 ..... R16
CR408 ..... T17
CR4704 ..... G28
CR4705 ..... K28
CR501 ..... P17
CR601 ..... O20
CR602 ..... O21
CR701 ..... N18
CR702 ..... N19
CR703 ..... N19
CR803 ..... U17
JC201 ..... M21
JC202 ..... Q29
JC204 ..... J26
JC205 ..... U31
JC206 ..... K29
JC207 ..... L29
JC208 ..... O22
JC209 ..... K27
JC210 ..... M26
JC211 ..... M26
JC212 ..... M26
JC214 ..... O23
JC216 ..... I24
JC217 ..... Q22
JC220 ..... H29
JC221 ..... B19
JC222 ..... B22
JC226 ..... Q23
JC301 ..... J24
JC302 ..... J22
JC303 ..... H20
JC304 ..... F19
JC305 ..... C21
JC306 ..... L19
JC307 ..... H17
JC308 ..... H27
JC309 ..... N29
JC310 ..... T16
JC311 ..... C19
JC312 ..... M16
JC313 ..... R16
JC314 ..... E28
JC316 ..... J24
JC317 ..... J22
JC318 ..... M19
JC320 ..... J23
JC328 ..... F17
JC332 ..... F26
JC401 ..... H17
JC402 ..... I17
JC701 ..... U19
JC702 ..... Q18
JC703 ..... N17
JC704 ..... U18
JC705 ..... U18
JC706 ..... Q18
JC707 ..... M18
JC708 ..... V19
JC709 ..... U19
JC711 ..... R21
JC712 ..... N20
JC713 ..... N20
JC714 ..... N20
Q101 ..... R20
Q2301 ..... P22
Q2302 ..... O26
Q2501 ..... T31
Q2502 ..... U27
Q2503 ..... S28
Q2504 ..... P29
Q2505 ..... V28
Q2506 ..... S31
Q2507 ..... S29
Q2508 ..... P31
Q2509 ..... R31
Q2510 ..... R29
Q2511 ..... U31
Q2512 ..... K18
Q2513 ..... S31
Q2514 ..... R31
Q2515 ..... S31
Q2516 ..... S31
Q2517 ..... Q28
Q2518 ..... S29
Q2701 ..... O24
Q2801 ..... Q22
Q2802 ..... P22
Q2803 ..... P23
Q2901 ..... Q21
Q2902 ..... Q24
Q2903 ..... Q23
Q2904 ..... R22
Q2905 ..... R25
Q2906 ..... Q23
Q2907 ..... R24
Q2908 ..... Q25
Q2909 ..... R22
Q2910 ..... R22
Q2911 ..... R26
Q2912 ..... R22
Q2913 ..... R23
Q2914 ..... R23
Q301 ..... R18
Q3101 ..... I18
Q3102 ..... H22
Q3103 ..... H17
Q3104 ..... K15
Q3105 ..... F22
Q3106 ..... E18
Q3107 ..... G28
Q3108 ..... C19
Q3109 ..... C20
Q3200 ..... D19
Q3201 ..... D20
Q3301 ..... N29
Q3302 ..... N30
Q3303 ..... N30
Q3304 ..... I20
Q3306 ..... F19
Q3310 ..... G22
Q3311 ..... I18
Q3312 ..... D15
Q3501 ..... F17
Q3502 ..... G17
Q3503 ..... G18
Q3801 ..... K18
Q3802 ..... K18
Q401 ..... S17
Q402 ..... Q17
Q4108 ..... J26
Q4402 ..... C7
Q4501 ..... C23
Q4721 ..... S3
Q4722 ..... S3
Q4723 ..... T3
Q501 ..... N17
Q502 ..... N17
Q503 ..... N17
Q504 ..... P18
Q505 ..... N16
Q506 ..... O16
Q507 ..... O16
Q508 ..... P16
Q601 ..... N21
Q802 ..... U16
R101 ..... T19
R102 ..... T20
R103 ..... T21
R104 ..... T20
R105 ..... S21
R106 ..... T17
R107 ..... S20
R108 ..... R20
R109 ..... P19
R112 ..... R21
R113 ..... R20
R114 ..... Q20
R115 ..... Q19
R116 ..... Q19
R117 ..... Q19
R118 ..... P20
R119 ..... P21
R120 ..... T18
R121 ..... T18
R122 ..... Q21
R123 ..... P19
R124 ..... P20
R126 ..... S20
R1601 ..... U23
R1602 ..... U23
R1603 ..... T23
R1604 ..... V25
R1605 ..... V25
R1606 ..... V24
R1607 ..... V24
R1608 ..... V23
R1610 ..... T25
R1611 ..... V22
R1612 ..... V22
R1614 ..... T22
R1615 ..... T22
R1616 ..... T22
R1617 ..... S22
R1618 ..... U25
R201 ..... T16
R203 ..... R16
R204 ..... R16
R2201 ..... N23
R2202 ..... M23
R2203 ..... M22
R2204 ..... M22
R2301 ..... M24
R2302 ..... J23
R2304 ..... L23
R2305 ..... P21
R2306 ..... M23
R2307 ..... O22
R2308 ..... M24
R2309 ..... R21
R2310 ..... O27
R2311 ..... O27
R2312 ..... Q25
R2313 ..... O22
R2314 ..... J24
R2315 ..... L24
R2316 ..... M24
R2317 ..... O21
R2318 ..... O22
R2319 ..... K22
R2320 ..... K23
R2321 ..... K23
R2501 ..... T31
R2502 ..... S31
R2503 ..... T30
R2504 ..... U27
R2505 ..... V28
R2506 ..... U28
R2507 ..... T29
R2508 ..... U30
R2509 ..... U29
R2510 ..... U29
R2511 ..... U31
R2512 ..... T28
R2513 ..... U28
R2514 ..... T28
R2516 ..... Q31
R2517 ..... P31
R2518 ..... P29
R2519 ..... T31
R2520 ..... V30
R2521 ..... V30
R2522 ..... V30
R2523 ..... T28
R2524 ..... T28
R2525 ..... T28
R2526 ..... R31
R2527 ..... S32
R2528 ..... V29
R2529 ..... U29
R2530 ..... V28
R2531 ..... U29
R2532 ..... V27
R2533 ..... V28
R2534 ..... S28
R2535 ..... Q31
R2536 ..... Q31
R2537 ..... R31
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R3138 ..... F17
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R314 ..... Q19
R3140 ..... J15
R3141 ..... J15
R3143 ..... E19
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R402 ..... T16
R403 ..... S17
R404 ..... S17
R407 ..... Q16
R410 ..... Q16
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R4105 ..... P8
R4108 ..... O7
R4109 ..... O8
R411 ..... R16
R4110 ..... O8
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R4118 ..... L8
R4119 ..... L8
R412 ..... Q16
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R4134 ..... J26
R414 ..... Q17
R4145 ..... K26
R415 ..... Q18
R4150 ..... N8
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R4414 ..... B6
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R705 ..... M18
R706 ..... N20
R707 ..... M19
R708 ..... N20
R709 ..... M19
R807 ..... V17
R808 ..... U18
R814 ..... U20
R821 ..... V20
R822 ..... V19
U501 ..... O17
U701 ..... O19

CTC179
REPLACEMENT PARTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

Approved Substitute Stock Numbers—Before ordering stock numbers in the parts list, look for an approved substitute stock number in the current Price Schedule. This will minimize your service time and avoid ordering parts you already have in stock.

PRODUCT SAFETY NOTE—Components marked with a (*) have special characteristics important to safety. Before replacing any of these components, read carefully the **PRODUCT SAFETY NOTICE** in the basic service data. Do not degrade the safety of the set through improper servicing. Although assemblies as a whole may not be marked with a (*), replacement of assemblies with other assemblies not approved may result in a safety hazard.

Warranty Status of Assemblies and Parts—All assemblies and components shown in this parts list are eligible for warranty exchange or replacement except those with a dot (•) shown to the left of the Description. Assemblies and components with a dot (•) to the left of the Description are NOT eligible for warranty exchange or replacement.

Warranty replacement of cabinet parts requires the approval of a Thomson Consumer Electronics Field Service Manager.

Warranty Status and Specifications of assemblies and components are subject to change without notice. Consult the TCE Parts Pricing Microfiche for the latest warranty status information.

@NOTE: When ordering components that are listed more than once in this parts list, always adhere to the serial number application guidelines given in the description column. If a serial number application guideline is not given, always select the component with a value, rating, other specification or identification marking(s) that match those of the corresponding component in the instrument you are servicing.

CHASSIS ASSEMBLIES

CTC179BJ
CTC179CJ
CTC179CK
CTC179CM
CTC179DJ
CTC179DK
CTC179DL

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
C101	214032	XX30938-720		CAPCC 150PF J NPO 50V
C102	192060	XX11059-300		CAPCC 1000PF K SL 50V
C103	192060	XX11059-300		CAPCC 1000PF K SL 50V
C104	205227	XX20468-970		CAPCC 330PF J NPO 50V
C105	192060	XX11059-300		CAPCC 1000PF K SL 50V
C106	192060	XX11059-300		CAPCC 1000PF K SL 50V
C107	192060	XX11059-300		CAPCC 1000PF K SL 50V
C108	192060	XX11059-300		CAPCC 1000PF K SL 50V
C110	181090	XX11053-520		CAPCC 39PF J NPO 50V
C111	192060	XX11059-300		CAPCC 1000PF K SL 50V
C112	192060	XX11059-300		CAPCC 1000PF K SL 50V
C113	192060	XX11059-300		CAPCC 1000PF K SL 50V
C114	192060	XX11059-300		CAPCC 1000PF K SL 50V
C115	214032	XX30938-720		CAPCC 150PF J NPO 50V
C116	192060	XX11059-300		CAPCC 1000PF K SL 50V
C117	223146	XX11059-530		CAPCC 1.5PF B NPO 50V
C118	211039	XX80436-530		CAPCC 180FP J NPO 50V
C119	192060	XX11059-300		CAPCC 1000PF K SL 50V
C120	192060	XX11059-300		CAPCC 1000PF K SL 50V
C121	192060	XX11059-300		CAPCC 1000PF K SL 50V
C122	192060	XX11059-300	*	CAPCC 1000PF K SL 50V
C124	193339	XX30938-700		CAPCC 68PF J NPO 50V
C125	227089	XX60441-520		CAPCC 100PF G NPO 50V
C201	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C202	195689	XX11059-340		CAPCC .01UF K X7R 50V
C203	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C204	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C205	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C206	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C207	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C208	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C301	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C302	214740	XX50882-230		CAPCC 10PF J NPO 50V
C304	155050	XX20466-940		CAPCC 1000PF K SL 50V
C305	214760	XX20459-493		CAPCC 27PF J N750 50V
C306	214027	XX80436-490		CAPCC 12PF J NPO 50V
C307	197604	XX11058-640		CAPCC 27PF J NPO 50V
C308	194902	XX50882-370		CAPCC 120PF J NPO 50V
C309	197604	XX11058-640		CAPCC 27PF J NPO 50V
C310	227269	XX90571-050		CAPCC .75PF B NPO 50V
C311	214760	XX20459-493		CAPCC 27PF J N750 50V
C312	227077	XX40426-002		CAPCC 18PF G N220 50V
C313	214732	XX30938-740		CAPCC 470PF J NPO 50V
C314	214732	XX30938-740		CAPCC 470PF J NPO 50V
C316	192060	XX11059-300		CAPCC 1000PF K SL 50V
C401	197604	XX11058-640		CAPCC 27PF J NPO 50V
C407	194911	XX50882-360		CAPCC 33PF J NPO 50V
C411	194911	XX50882-360		CAPCC 33PF J NPO 50V
C424	193340	XX11058-670		CAPCC 100PF J NPO 50V
C501	215555	XX40432-770		CAPCC .01UF K X7R 50V
C502	214740	XX50882-230		CAPCC 10PF J NPO 50V
C503	214740	XX50882-230		CAPCC 10PF J NPO 50V
C504	192060	XX11059-300		CAPCC 1000PF K SL 50V
C505	202905	XX11058-650		CAPCC 39PF J NPO 50V
C506	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C507	200141	XX20467-040		CAP POLY .1UF K 63V
C508	190548	XX30935-330		CAPCC 4700PF K X7R 50V
C509	192060	XX11059-300		CAPCC 1000PF K SL 50V
C510	192060	XX11059-300		CAPCC 1000PF K SL 50V
C511	155050	XX20466-940		CAPCC 1000PF K SL 50V
C601	192060	XX11059-300		CAPCC 1000PF K SL 50V
C602	193340	XX11058-670		CAPCC 100PF J NPO 50V
C603	195689	XX11059-340		CAPCC .01UF K X7R 50V
C604	192060	XX11059-300		CAPCC 1000PF K SL 50V
C605	205227	XX20468-970		CAPCC 330PF J NPO 50V
C606	195689	XX11059-340		CAPCC .01UF K X7R 50V
C607	174406	XX40432-440		CAPCC 22PF J NPO 50V
C610	192060	XX11059-300		CAPCC 1000PF K SL 50V
C612	192060	XX11059-300		CAPCC 1000PF K SL 50V
C614	192060	XX11059-300		CAPCC 1000PF K SL 50V
C701	227084	XX50882-870		CAPCC 1PF B NPO 50V
C702	227074	XX30939-310		CAPCC 2PF B NPO 50V
C703	226965	XX14004-580		CAPCC 2PF B N750 50V
C704	227084	XX50882-870		CAPCC 1PF B NPO 50V
C705	214760	XX20459-493		CAPCC 27PF J N750 50V
C707	227084	XX50882-870		CAPCC 1PF B NPO 50V
C708	227088	XX60441-470		CAPCC 3PF B NPO 50V
C709	193339	XX30938-700		CAPCC 68PF J NPO 50V
C710	227088	XX60441-470		CAPCC 3PF B NPO 50V
C711	227084	XX50882-870		CAPCC 1PF B NPO 50V
C712	227088	XX60441-470		CAPCC 3PF B NPO 50V
C713	192060	XX11059-300		CAPCC 1000PF K SL 50V
C714	192060	XX11059-300		CAPCC 1000PF K SL 50V
C715	192060	XX11059-300		CAPCC 1000PF K SL 50V
C716	155050	XX20466-940		CAPCC 1000PF K SL 50V
C717	155050	XX20466-940		CAPCC 1000PF K SL 50V
C803	195689	XX11059-340		CAPCC .01UF K X7R 50V
C805	192060	XX11059-300		CAPCC 1000PF K SL 50V
C806	195689	XX11059-340		CAPCC .01UF K X7R 50V
C807	192060	XX11059-300		CAPCC 1000PF K SL 50V
C808	192060	XX11059-300		CAPCC 1000PF K SL 50V
C809	174410	XX90567-970		CAPCC 68PF J NPO 50V
C1601	224269	XX15048-340		CAP LYTC 4.7UF M 35V
C1602	190499	XX40433-160		CAP LYTC 4.7UF M 100V
C1603	190499	XX40433-160		CAP LYTC 4.7UF M 100V
C1604	156239	XX30935-880		CAP LYTC 10UF M 63V

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C1605	224271	XX30935-530	CAP POLY .22UF J 63V
C1606	160077	XX60438-920	CAP LYTC .47UF M 100V
C1607	216804	XX11007-472	CAP LYTC 1UF M 50V CTC179BJ,DK,CK,CM
C1607	220998	XX60438-930	CAP LYTC 1UF M 100V CTC179CJ,DJ,DL
C1608	224269	XX15048-340	CAP LYTC 4.7UF M 35V
C1609	193043	XX80434-350	CAP LYTC 47UF M 25V
C1610	228341	XX15073-330	CAP LYTC 4.7UF M 16V CTC179BJ,DK,CK,CM
C1610	224269	XX15048-340	CAP LYTC 4.7UF M 35V CTC179CJ,DJ,DL
C1611	224268	XX11054-370	CAP POLY 2700PF J 100V
C1612	200153	XX40432-900	CAP POLY .047UF J 63V
C1613	207867	XX90541-830	CAP LYTC 3.3UF M 50V CTC179BJ,DK,CK,CM
C1613	151119	XX11054-840	CAP LYTC 3.3UF 100V CTC179CJ,DJ,DL
C1614	228341	XX15073-330	CAP LYTC 4.7UF M 16V CTC179BJ,DK,CK,CM
C1614	224269	XX15048-340	CAP LYTC 4.7UF M 35V CTC179CJ,DJ,DL
C1615	202011	XX90568-300	CAP POLY .1UF J 63V
C1616	156239	XX30935-880	CAP LYTC 10UF M 63V
C1619	194581	XX30935-870	CAP LYTC 100UF M 25V
C1620	195689	XX11059-340	CAPCC .01UF K X7R 50V
C1621	214740	XX50882-230	CAPCC 10PF J NPO 50V
C1622	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2201	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C2202	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2203	190499	XX40433-160	CAP LYTC 4.7UF M 100V
C2302	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C2303	190500	XX70428-070	CAP LYTC 180UF M 16V
C2304	197601	XX30939-240	CAPCC .022UF K X7R 50V
C2305	214734	XX11059-430	CAPCC .047UF Z Z5U 50V
C2306	181091	XX11053-700	CAPCC 150PF J NPO 50V (SEE NOTE@)
C2306	215555	XX40432-770	CAPCC .01UF K X7R 50V (SEE NOTE@)
C2307	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C2308	160077	XX60438-920	CAP LYTC .47UF M 100V
C2309	223700	XX90574-730	CAP LYTC .47UF M 100V
C2310	214732	XX30938-740	CAPCC 470PF J NPO 50V
C2311	156239	XX30935-880	CAP LYTC 10UF M 63V
C2312	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2313	220998	XX60438-930	CAP LYTC 1UF M 100V
C2314	181091	XX11053-700	CAPCC 150PF J NPO 50V (SEE NOTE@)
C2314	215555	XX40432-770	CAPCC .01UF K X7R 50V (SEE NOTE@)
C2315	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2316	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2317	190500	XX70428-070	CAP LYTC 180UF M 16V
C2501	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2502	192846	XX20467-220	CAP LYTC 68UF M 16V
C2503	205551	XX30938-730	CAPCC 220PF J NPO 50V
C2504	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2505	156239	XX30935-880	CAP LYTC 10UF M 63V
C2506	227075	XX30939-320	CAPCC 18PF G NPO 50V
C2507	227250	XX80436-870	CAPCC 6PF C NPO 50V
C2508	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2509	156239	XX30935-880	CAP LYTC 10UF M 63V
C2510	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2511	205230	XX20469-340	CAPCC 4700PF K X7R 50V
C2512	156239	XX30935-880	CAP LYTC 10UF M 63V
C2513	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2514	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2515	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2516	197604	XX11058-640	CAPCC 27PF J NPO 50V
C2517	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2518	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2519	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2520	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2521	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2522	205551	XX30938-730	CAPCC 220PF J NPO 50V
C2523	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2524	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2525	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C2527	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2528	227017	XX15003-240	CAP LYTC 10UF M 16V
C2529	214728	XX80434-330	CAP LYTC 100UF M 10V
C2530	205227	XX20468-970	CAPCC 330PF J NPO 50V

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C2532	190530	XX11053-050	CAPCC .33UF Z Y5V 25V
C2533	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C2534	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C2535	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2536	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2538	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2539	214027	XX80436-490	CAPCC 12PF J NPO 50V
C2541	220154	XX11058-690	CAPCC 300PF J NPO 50V
C2542	195689	XX11059-340	CAPCC .01UF K X7R 50V
C2544	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2701	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2702	190552	XX70427-610	CAPCC .1UF K X7R 50V
C2703	151119	XX11054-840	CAP LYTC 3.3UF 100V
C2704	190499	XX40433-160	CAP LYTC 4.7UF M 100V
C2706	190500	XX70428-070	CAP LYTC 180UF M 16V
C2707	190500	XX70428-070	CAP LYTC 180UF M 16V
C2709	156239	XX30935-880	CAP LYTC 10UF M 63V
C2711	200141	XX20467-040	CAP POLY .1UF K 63V (SEE NOTE@)
C2711	181840	XX40432-920	CAP POLY .47UF J 63V (SEE NOTE@)
C2712	174421	XX70427-480	CAPCC 2200PF K X7R 50V
C2713	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2714	190542	XX80433-750	CAPCC 56PF J NPO 50V
C2715	197609	XX50882-800	CAPCC 1500PF K X7R 50V (SEE NOTE@)
C2715	193340	XX11058-670	CAPCC 100PF J NPO 50V (SEE NOTE@)
C2716	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2717	214740	XX50882-230	CAPCC 10PF J NPO 50V
C2751	221142	XX11067-100	CAP LYTC 33UF M 50V
C2753	220998	XX11067-090	CAP LYTC 1UF M 100V
C2754	214050	XX50880-330	CAP LYTC 6.8UF M 100V
C2755	214698	XX11054-950	CAP LYTC 10UF M 63V
C2756	223700	XX90574-730	CAP LYTC .47UF M 100V
C2801	202907	XX20468-940	CAPCC 15PF J NPO 50V
C2802	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C2803	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C2804	227075	XX30939-320	CAPCC 18PF G NPO 50V
C2805	214756	XX11054-750	CAP LYTC 15UF M 63V
C2807	197606	XX20469-360	CAPCC .033UF Z Y5V 50V
C2808	156239	XX30935-880	CAP LYTC 10UF M 63V
C2809	220344	XX15047-900	CAPCC 680PF J NPO 50V
C2901	227075	XX30939-320	CAPCC 18PF G NPO 50V
C2902	193917	XX60440-980	CAPCC 5PF C NPO 50V
C2903	227075	XX30939-320	CAPCC 18PF G NPO 50V
C2904	193917	XX60440-980	CAPCC 5PF C NPO 50V
C2905	174405	XX90567-870	CAPCC 18PF J NPO 50V
C2906	193917	XX60440-980	CAPCC 5PF C NPO 50V
C2907	192846	XX20467-220	CAP LYTC 68UF M 16V
C3100	214729	XX50880-170	CAP LYTC 220UF M 35V
C3101	194903	XX60441-080	CAPCC 22PF J NPO 50V
C3102	194903	XX60441-080	CAPCC 22PF J NPO 50V
C3103	194903	XX60441-080	CAPCC 22PF J NPO 50V
C3104	222008	XX15041-170	CAPCC .1UF K X7R 25V
C3106	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3107	194911	XX50882-360	CAPCC 33PF J NPO 50V
C3108	194911	XX50882-360	CAPCC 33PF J NPO 50V
C3109	220156	XX70430-380	CAPCC 820PF K X7R 50V
C3110	201163	XX70427-590	CAPCC .068UF K X7R 50V
C3111	222008	XX15041-170	CAPCC .1UF K X7R 25V
C3112	193043	XX80434-350	CAP LYTC 47UF M 25V
C3113	195689	XX11059-340	CAPCC .01UF K X7R 50V
C3114	194903	XX60441-080	CAPCC 22PF J NPO 50V
C3117	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C3119	227089	XX60441-520	CAPCC 100PF G NPO 50V
C3120	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3121	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3122	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3201	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3202	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C3203	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C3204	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3205	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3206	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C3301	192045	XX80436-390	CAPCC 7PF D NPO 50V
C3302	220998	XX60438-930	CAP LYTC 1UF M 100V
C3303	192045	XX80436-390	CAPCC 7PF D NPO 50V
C3304	220998	XX60438-930	CAP LYTC 1UF M 100V
C3305	192045	XX80436-390	CAPCC 7PF D NPO 50V
C3306	220998	XX60438-930	CAP LYTC 1UF M 100V
C3307	202907	XX20468-940	CAPCC 15PF J NPO 50V

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C3309	220998	XX60438-930	CAP LYTC 1UF M 100V
C3311	227089	XX60441-520	CAPCC 100PF G NP0 50V
C3312	222008	XX15041-170	CAPCC .1UF K X7R 25V CTC179BJ,CK,CM
C3312	195689	XX11059-340	CAPCC .01UF K X7R 50V CTC179CJ,DJ,DK,DL
C3314	195689	XX11059-340	CAPCC .01UF K X7R 50V
C3315	195689	XX11059-340	CAPCC .01UF K X7R 50V
C3317	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3321	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3322	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C3323	214740	XX50882-230	CAPCC 10PF J NPO 50V
C3324	214740	XX50882-230	CAPCC 10PF J NPO 50V
C3325	214740	XX50882-230	CAPCC 10PF J NPO 50V
C3326	214740	XX50882-230	CAPCC 10PF J NPO 50V
C3400	214740	XX50882-230	CAPCC 10PF J NPO 50V
C3401	214740	XX50882-230	CAPCC 10PF J NPO 50V
C3502	214738	XX70430-440	CAPCC .068UF Z Y5V 50V
C3505	222008	XX15041-170	CAPCC .1UF K X7R 25V
C3506	205551	XX30938-730	CAPCC 220PF J NPO 50V
C3801	197606	XX20469-360	CAPCC .033UF Z Y5V 50V
C3802	197606	XX20469-360	CAPCC .033UF Z Y5V 50V
C3803	197606	XX20469-360	CAPCC .033UF Z Y5V 50V
C3804	190551	XX90568-210	CAPCC .022UF K X7R 50V
C3805	197601	XX30939-240	CAPCC .022UF K X7R 50V
C3806	190551	XX90568-210	CAPCC .022UF K X7R 50V
C3807	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C3808	197601	XX30939-240	CAPCC .022UF K X7R 50V
C3809	197601	XX30939-240	CAPCC .022UF K X7R 50V
C4001	214067	XX15048-750 *	CAP POLY .22UF M 250V (SEE NOTE@)
C4001	229322	XX10848-800 *	CAP POLY .1UF M 125V (SEE NOTE@)
C4002	250102	XX11055-040 *	CAPCD 470PF M Z5U 120V
C4003	190538	XX11057-250	CAPCD 680PF M Z5P 1KV
C4004	190538	XX11057-250	CAPCD 680PF M Z5P 1KV
C4006	190561	2875500-009 *	CAP LYTC 820UF K 200V
C4007	195697	XX40433-270 *	CAPCD 5000PF M Z5V 120
C4008	190538	XX11057-250	CAPCD 680PF M Z5P 1KV
C4009	190538	XX11057-250	CAPCD 680PF M Z5P 1KV
C4011	214067	XX15048-750 *	CAP POLY .22UF M 250V (SEE NOTE@)
C4011	229322	XX10848-800 *	CAP POLY .1UF M 125V (SEE NOTE@)
C4101	146179	XX30937-370	CAPCD 470PF K Z5P 250V
C4102	143881	XX11055-540	CAPCD 2200PF K Z5P 50V
C4103	155050	XX20466-940	CAPCC 1000PF K SL 50V
C4104	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C4105	202011	XX90568-300	CAP POLY .1UF J 63V
C4106	194366	XX80434-390	CAP LYTC 100UF M 16V
C4107	193049	XX20466-930	CAPCC 820PF K X7R 50V
C4108	151578	XX11054-710	CAP LYTC 33UF M 35V
C4109	155050	XX20466-940	CAPCC 1000PF K SL 50V
C4110	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4111	223346	XX50880-360	CAP LYTC 1500UF M 35V
C4112	190497	XX70428-030	CAP LYTC 680UF M 50V
C4113	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4114	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C4115	227019	XX15041-780	CAP LYTC 1500UF M 25V
C4116	143879	XX80434-800	CAPCD 1000PF K Z5P 50V
C4117	143879	XX80434-800	CAPCD 1000PF K Z5P 50V
C4118	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4119	146179	XX30937-370	CAPCD 470PF K Z5P 250V
C4120	190497	XX70428-030	CAP LYTC 680UF M 50V
C4121	200147	2875500-10A	CAP LYTC 470UF M 180V
C4123	205551	XX30938-730	CAPCC 220PF J NPO 50V
C4124	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C4125	102230	XX60440-270	CAPCD 470PF K Z5P 500V
C4126	102230	XX60440-270 *	CAPCD 470PF K Z5P 500V
C4127	214070	XX60435-910 *	CAP POLY 8200PF J 600V
C4128	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4129	192846	XX20467-220	CAP LYTC 68UF M 16V
C4130	175119	XX80440-780	CAP LYTC 1000UF M 35V
C4131	156239	XX30935-880	CAP LYTC 10UF M 63V
C4132	102230	XX60440-270	CAPCD 470PF K Z5P 500V
C4133	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4134	227019	XX15041-780	CAP LYTC 1500UF M 25V
C4135	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C4136	192846	XX20467-220	CAP LYTC 68UF M 16V
C4137	227072	XX30935-490	CAP POLY .82UF K 63V
C4138	146179	XX30937-370	CAPCD 470PF K Z5P 250V
C4139	156239	XX30935-880	CAP LYTC 10UF M 63V

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C4140	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C4141	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C4142	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4143	175119	XX80440-780	CAP LYTC 1000UF M 35V
C4145	190497	XX70428-030	CAP LYTC 680UF M 50V
C4146	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4147	102230	XX60440-270 *	CAPCD 470PF K Z5P 500V
C4148	155050	XX20466-940	CAPCC 1000PF K SL 50V
C4190	190500	XX70428-070	CAP LYTC 180UF M 16V
C4191	222008	XX15041-170	CAPCC .1UF K X7R 25V
C4193	222008	XX15041-170	CAPCC .1UF K X7R 25V
C4194	227056	XX15053-210	CAP LYTC 10UF M 50V
C4195	227056	XX15053-210	CAP LYTC 10UF M 50V
C4196	227056	XX15053-210	CAP LYTC 10UF M 50V
C4197	192846	XX20467-220	CAP LYTC 68UF M 16V
C4198	227248	XX70427-760	CAP POLY .022UF K 100V
C4199	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4201	155090	XX70428-520	CAPCD .01UF K Z5P 50V
C4202	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C4301	174402	XX90567-810	CAPCC 10PF J NPO 50V
C4302	227083	XX50879-980	CAP POLY .27UF K 63V
C4303	151119	XX11054-840	CAP LYTC 3.3UF 100V
C4304	192060	XX11059-300	CAPCC 1000PF K SL 50V
C4305	190499	XX40433-160	CAP LYTC 4.7UF M 100V
C4306	227050	XX15048-940	CAPCC 470PF K NP0 500V
C4307	193340	XX11058-670	CAPCC 100PF J NPO 50V
C4308	225703	XX30935-630	CAP POLY .01UF J 100V
C4309	155050	XX20466-940	CAPCC 1000PF K SL 50V
C4310	214732	XX30938-740	CAPCC 470PF J NPO 50V
C4352	210689	XX40435-180	CAPCC 47PF J NPO 50V
C4353	197601	XX30939-240	CAPCC .022UF K X7R 50V
C4354	195691	XX50880-220	CAP LYTC 2.2UF M 100V
C4402	227845	XX15065-080	CAPCD 390PF J SL 2KV CTC179BJ
C4402	227068	XX15065-090 *	CAPCD 470PF J SL 2KV CTC179CJ,CK,CM, DJ,DK,DL
C4403	229323	XX15069-000 *	CAP POLY .0157UF E 1.6KV CTC179BJ
C4403	227021	XX15042-590 *	CAP POLY .0186UF E 1.6KV CTC179CJ,CK, CM,DJ,DK,DL
C4405	200149	XX11057-320 *	CAP POLY .056UF J 400V
C4406	196050	XX70428-060	CAP LYTC 2.2UF M 200V
C4407	203739	XX20475-430 *	CAP POLY .45UF J 250V CTC179BJ
C4407	227080	XX15046-430 *	CAP POLY .074UF J 250V CTC179CJ,CK,CM,DK
C4407	227315	XX15053-060 *	CAP POLY .067UF J 250V CTC179DJ,DL
C4408	227053	XX15053-180	CAP LYTC 10UF M 50V
C4409	145253	XX60439-940	CAPCD 120PF K Z5P 250V
C4410	190534	XX40433-650	CAPCD 4700PF K Z5P 250V
C4411	146158	XX20467-200 *	CAP POLY .056UF K 250V
C4412	146158	XX20467-200 *	CAP POLY .056UF K 250V
C4413	104135	XX40434-400	CAPCD 680PF K Z5P 250V
C4414	104135	XX40434-400	CAPCD 680PF K Z5P 250V
C4415	227068	XX15065-090 *	CAPCD 470PF J SL 2KV CTC179BJ
C4415	227069	XX15065-100 *	CAPCD 680PF J SL 2KV CTC179CJ,CK,CM, DJ,DK,DL
C4416	102230	XX60440-270 *	CAPCD 470PF K Z5P 500V
C4418	225703	XX30935-630	CAP POLY .01UF J 100V
C4419	227087	XX60439-000	CAP LYTC 3.3UF M 100V
C4502	227019	XX15041-780	CAP LYTC 1500UF M 25V
C4504	190523	XX30935-550	CAP POLY .22UF M 100V
C4505	161285	XX20467-280	CAP LYTC 220UF M 35V
C4506	190721	XX30935-960	CAP LYTC 1000UF M 35V
C4507	190552	XX70427-610	CAPCC .1UF K X7R 50V
C4551	227073	XX30935-520	CAP POLY .15UF J 63V
C4552	181840	XX40432-920	CAP POLY .47UF J 63V
C4601	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C4602	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C4603	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C4604	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C4606	175119	XX80440-780	CAP LYTC 1000UF M 35V
C4607	195689	XX11059-340	CAPCC .01UF K X7R 50V
C4611	195689	XX11059-340	CAPCC .01UF K X7R 50V
C4612	181462	XX40432-850	CAPCC .22UF Z Y5V 50V
C4613	175119	XX50887-020	CAP LYTC 1000UF M 25V
C4701	104135	XX40434-500	CAPCD 680PF K Z5P 500V

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
C4702	227071	XX15070-230		CAP LYTC 47UF M 315V
C4720	228909	XX15081-940		CAP POLY .1UF K 630V CTC179BJ,CK
C4720	227061	XX15061-950		CAP POLY .015UF K 400V CTC179CJ,CM,DJ,DK,DL
C4721	220157	XX90570-990		CAPCC .033UF Z Z5U 50V
C4722	197609	XX50882-800		CAPCC 1500PF K X7R 50V
C4723	190500	XX70428-070		CAP LYTC 180UF M 16V
C4759	227078	XX40434-540	*	CAPCD 2200PF M Z5P 2KV
C4760	220341	XX80434-360		CAP LYTC 33UF M 63V
C4802	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C4803	200142	XX80434-020		CAPCC .018UF K X7R 50V
C4805	190552	XX70427-610		CAPCC .1UF K X7R 50V
C4806	150733	XX11057-020		CAPCD 1000PF K Z5P 250V
C4807	190523	XX30935-550		CAP POLY .22UF M 100V
C4808	214732	XX30938-740		CAPCC 470PF J NPO 50V
C4809	214748	XX11054-330		CAP POLY .033UF K 100V
C4810	214749	XX90568-510		CAP LYTC 68UF M 50V
C4811	227089	XX60441-520		CAPCC 100PF G NPO 50V
C4812	227089	XX60441-520		CAPCC 100PF G NPO 50V (SEE NOTE@)
C4812	205551	XX30938-730		CAPCC 220PF J NPO 50V (SEE NOTE@)
C4813	214015	XX40432-930		CAP POLY 1UF M 63V
C4814	214015	XX40432-930		CAP POLY 1UF M 63V
C4815	227073	XX30935-520		CAP POLY .15UF J 63V
C4901	223351	XX60438-980		CAP LYTC 47UF M 63V
C4902	146179	XX30937-350		CAPCD 470PF M Z5P 250V
C4904	181462	XX40432-850		CAPCC .22UF Z Y5V 50V
C4906	220132	XX15041-150		CAPCC .33UF Z Y5V 25V
CF2201	195702	XX70438-300		FILTER CERAMIC
CR101	215493	XX50887-840		DIODE
CR102	211863	XX40439-390		DIODE
CR103	215493	XX50887-840		DIODE
CR104	227051	XX15050-100		DIODE
CR105	211863	XX40439-390		DIODE
CR106	215493	XX50887-840		DIODE
CR107	215493	XX50887-840		DIODE
CR108	211863	XX40439-390		DIODE
CR109	215493	XX50887-840		DIODE
CR110	215493	XX50887-840		DIODE
CR111	215493	XX50887-840		DIODE
CR112	215493	XX50887-840		DIODE
CR113	215493	XX50887-840		DIODE
CR301	215493	XX50887-840		DIODE
CR303	215492	XX60445-480		DIODE
CR304	215492	XX60445-480		DIODE
CR305	215492	XX60445-480		DIODE
CR306	215493	XX50887-840		DIODE
CR307	227082	XX15045-960		DIODE
CR501	215493	XX50887-840		DIODE
CR601	227051	XX15050-100		DIODE
CR602	227051	XX15050-100		DIODE
CR701	215492	XX60445-480		DIODE
CR702	211863	XX40439-390		DIODE
CR703	215493	XX50887-840		DIODE
CR803	215493	XX50887-840		DIODE
CR1601	164717	XX70436-540		DIODE
CR2201	227051	XX15050-100		DIODE
CR2501	164717	XX70436-540		DIODE
CR2751	164717	XX70436-540		DIODE
CR2752	229644	XX15082-040		DIODE
CR3101	164717	XX70436-540		DIODE
CR3102	223659	XX15047-540		DIODE
CR3103	223659	XX15047-540		DIODE
CR3104	226783	XX70438-310		DIODE ZENER 13V .5W
CR3105	215493	XX50887-840		DIODE
CR3106	215493	XX50887-840		DIODE
CR3107	215493	XX50887-840		DIODE
CR3109	198602	XX80444-140		DIODE ZENER 5.1V .5W
CR3110	198602	XX80444-140		DIODE ZENER 5.1V .5W
CR3301	223659	XX15047-540		DIODE
CR3108	198602	XX80444-140		DIODE ZENER 5.1V .5W
CR3109	218987	XX15042-360		DIODE ZENER 5.1V .2W
CR3110	218987	XX15042-360		DIODE ZENER 5.1V .2W
CR3111	198602	XX80444-140		DIODE ZENER 5.1V .5W
CR3302	223659	XX15047-540		DIODE
CR3306	223659	XX15047-540		DIODE
CR3307	226782	XX11073-420		DIODE ZENER 11V .5W
CR3308	223659	XX15047-540		DIODE
CR3400	215488	XX11073-650		DIODE ZENER 5.6V .4W
CR3401	215488	XX11073-650		DIODE ZENER 5.6V .4W
CR3501	223659	XX15047-540		DIODE
CR4001	214649	XX50873-156	*	DIODE
CR4101	223338	XX15047-700		DIODE
CR4102	227066	XX15064-100		DIODE
CR4103	164717	XX70436-540		DIODE
CR4105	164717	XX70436-540		DIODE
CR4106	164717	XX70436-540		DIODE
CR4107	164590	XX20474-070		DIODE
CR4108	164590	XX20474-070		DIODE
CR4109	223339	XX15047-770		DIODE
CR4110	164589	XX50888-800		DIODE
CR4111	164590	XX20474-070		DIODE
CR4112	218514	XX90578-010		DIODE ZENER 6.8V .5W
CR4113	226504	XX70438-200		DIODE ZENER 5.6V .5W
CR4114	164717	XX70436-540		DIODE
CR4115	164590	XX20474-070		DIODE
CR4116	214653	XX70402-434		DIODE
CR4117	226782	XX11073-420		DIODE ZENER 11V .5W
CR4118	176296	XX30946-670		DIODE
CR4119	176296	XX30946-670		DIODE
CR4120	217306	XX15053-310		DIODE ZENER 33V 1.3W
CR4121	164717	XX70436-540		DIODE
CR4126	164717	XX70436-540		DIODE
CR4128	164590	XX20474-070		DIODE
CR4129	147015	XX11070-780		DIODE
CR4130	147015	XX11070-780		DIODE
CR4131	223651	XX15042-270		DIODE
CR4132	176296	XX30946-670		DIODE
CR4133	164717	XX70436-540		DIODE
CR4201	164717	XX70436-540		DIODE
CR4303	164717	XX70436-540		DIODE
CR4351	164717	XX70436-540		DIODE
CR4401	227291	XX15042-630		DIODE
CR4402	164589	XX50888-800		DIODE
CR4403	176296	XX30946-670	*	DIODE
CR4404	176296	XX30946-670	*	DIODE
CR4405	176296	XX30946-670		DIODE
CR4406	176296	XX30946-670		DIODE
CR4408	140971	XX70436-530		DIODE
CR4501	147015	XX11070-780		DIODE
CR4502	164717	XX70436-540		DIODE
CR4601	147015	XX11070-780		DIODE
CR4602	147015	XX11070-780		DIODE
CR4603	147015	XX11070-780		DIODE
CR4604	147015	XX11070-780		DIODE
CR4605	164717	XX70436-540		DIODE
CR4611	164717	XX70436-540		DIODE
CR4612	215488	XX11073-650		DIODE ZENER 5.6V .4W
CR4701	164589	XX50888-800		DIODE
CR4704	223659	XX15047-540		DIODE
CR4705	214647	XX10037-960		DIODE
CR4720	176296	XX30946-670		DIODE
CR4721	176296	XX30946-670		DIODE CTC179BJ,CK
CR4721	164717	XX70436-540		DIODE CTC179CJ,CM, DJ,DK,DL
CR4722	164717	XX70436-540		DIODE
CR4723	164717	XX70436-540		DIODE
CR4801	164717	XX70436-540		DIODE
CR4803	164717	XX70436-540		DIODE
CR4804	164717	XX70436-540		DIODE
CR4901	157301	XX60446-580	*	DIODE
CR4902	159429	XX30946-700	*	DIODE ZENER 10V .4W
CR4903	228943	XX11073-690		DIODE ZENER 33V .5W
DL2501	227063	XX15062-08A		DELAY LINE
E702	227055	XX15052-49A		JACK PHONO-RF OUT
F4001	175425	XX40441-860	*	FUSE 5A 125V
FB3101	226467	XX50895-750		BEAD
FB4101	154042	2843117-005		BEAD
FB4102	154042	2843117-005		BEAD
FB4103	227067	XX15064-400		BEAD
FB4104	154042	2843117-005		BEAD
FB4105	154042	2843117-005		BEAD
FB4106	154042	2843117-005		BEAD
FB4107	154042	2843117-005		BEAD
FB4108	154042	2843117-005		BEAD
FB4109	154042	2843117-005		BEAD

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
FB4110	154042	2843117-005		BEAD
FB4111	154042	2843117-005		BEAD
FB4112	154042	2843117-005		BEAD
FB4113	154042	2843117-005		BEAD
FB4114	154042	2843117-005		BEAD
FB4115	154042	2843117-005		BEAD
FB4116	152103	2843117-002		BEAD
FB4401	229324	XX15073-710		BEAD
FB4404	154042	2843117-005		BEAD
FB4591	226467	XX50895-750		BEAD
FB4701	154042	2843117-005		BEAD
FB4702	154042	2843117-005		BEAD
FL101	181470	XX30953-360		FILTER LC HIGH PASS
J801	215543	XX11043-55A		CONNECTOR F TYPE ANT A
J802	215543	XX11043-55A		CONNECTOR F TYPE ANT B
J2001	226977	XX60458-390		CONNECTOR 3 PIN T2PIP
J2003	219160	XX60430-776		CONNECTOR 5 PIN TUNER
J2004	226978	XX70449-810		CONNECTOR 3 PIN Y/C-PIP
J3001	226966	XX11097-560		CONNECTOR 8 PIN +12V
J3002	226979	XX90581-960	*	CONNECTOR 13 PIN PIP
J3004	227034	XX15051-470	*	CONNECTOR 13 PIN I/O
J3104	218375	XX20459-464		CONNECTOR 7 PIN CE BUS
J3400	214609	XX50757-500		SOCKET HEADPHONE JACK
J4102	227036	XX15049-710	*	CONNECTOR 5 PIN AUDIO
J4105	226970	XX15049-720	*	CONNECTOR 6 PIN DEGAUS
JC201	181161	XX50885-530	*	RES CMF 1/8W 5% .0R
JC202	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC205	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC206	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC209	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC210	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC211	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC212	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC214	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC216	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC217	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC220	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC221	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC222	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC226	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC301	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC302	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC303	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC304	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC305	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC306	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC307	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC308	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC309	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC310	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC311	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC312	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC313	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC314	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC316	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC317	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC318	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC319	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC320	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC321	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC328	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC330	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC331	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC332	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC401	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC402	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC702	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC703	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC703	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC704	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC705	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC706	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC707	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC708	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC709	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC711	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC712	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC713	181161	XX50885-530		RES CMF 1/8W 5% .0R
JC714	205408	XX80440-510		RES CMF 1/10W 10% .0R

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
JW327	175325	XX50882-950		RES CF 1/4W 5% 100R
K4201	190490	XX90578-040	*	RELAY DEGAUSSING
L101	226982	2G32022-06A		COIL AIR
L102	227003	2G32023-14A		COIL AIR
L103	227005	2G32024-14A		COIL AIR
L104	226992	2G32022-10A		COIL AIR
L105	227006	2G32024-16A		COIL AIR
L106	200559	XX47025-302		COIL 3.9UH
L107	226987	2G32023-01A		COIL AIR
L108	226998	2G32023-09A		COIL AIR
L109	226993	2G32023-03A		COIL AIR
L110	226994	2G32023-07A		COIL AIR
L111	226998	2G32023-09A		COIL AIR
L112	226995	2G32024-03A		COIL AIR
L113	227000	2G32024-08A		COIL AIR
L114	226996	2G32023-06A		COIL AIR
L115	227000	2G32024-08A		COIL AIR
L301	227427	2G32023-04A		COIL AIR
L302	226988	2G32021-06A		COIL AIR
L303	227005	2G32024-14A		COIL AIR
L304	226983	2G32021-02A		COIL AIR
L305	226984	2G32021-03A		COIL AIR
L306	226990	2G32024-02A		COIL AIR
L307	226991	2G32023-02A		COIL AIR
L308	226985	2G32021-05A		COIL AIR
L601	226999	2G32024-07A		COIL AIR
L602	226999	2G32024-07A		COIL AIR
L603	227002	2G32024-12A		COIL AIR
L604	227001	2G32024-09A		COIL AIR
L701	226986	2G32022-01A		COIL AIR
L702	226986	2G32022-01A		COIL AIR
L703	226989	2G32022-09A		COIL AIR
L704	226996	2G32023-06A		COIL AIR
L801	226999	2G32024-07A		COIL AIR
L2201	227052	XX15051-70A		COIL
L2301	197616	XX90574-540		COIL 2.2UH
L2302	227070	XX15065-940		COIL
L2303	195709	XX90574-530		COIL 1UH
L2304	195709	XX90574-530		COIL 1UH
L2305	175409	XX80440-610		COIL 10UH
L2501	160186	XX30944-680		COIL 100UH
L2502	215503	XX70434-380		COIL 82UH
L2503	210687	XX40438-390		COIL 12UH
L2504	215503	XX70434-380		COIL 82UH
L2505	161243	XX11066-630		COIL 10UH
L2506	161243	XX11066-630		COIL 10UH
L2507	149167	XX50886-760		COIL 68UH
L2701	175409	XX80440-610		COIL 10UH
L2702	175409	XX80440-610		COIL 10UH
L2705	195713	XX11066-650		COIL 47UH
L2901	161243	XX11066-630		COIL 10UH
L2902	161243	XX11066-630		COIL 10UH
L2903	161243	XX11066-630		COIL 10UH
L2904	175409	XX80440-610		COIL 10UH
L3101	161243	XX11066-630		COIL 10UH
L3301	227095	XX70438-440		COIL 82UH
L3302	227095	XX70438-440		COIL 82UH
L3303	227095	XX70438-440		COIL 82UH
L3304	227093	XX60447-940		COIL 56UH
L4001	227014	XX15062-740	*	TRANSFORMER
L4002	227283	2G32008-F1A	*	CORE ASY
L4101	143893	XX70434-500		COIL 2.2UH
L4102	143893	XX70434-500		COIL 2.2UH
L4103	143893	XX70434-500		COIL 2.2UH
L4104	190017	XX50886-880		COIL 27UH
L4105	190017	XX50886-880		COIL 27UH
L4401	190480	XX20472-180		COIL 2.2UH
L4402	210895	XX40451-920	*	COIL 17.5UH CTC179BJ, CJ,CK,CM,DK,DL
L4402	227313	XX15040-70B	*	COIL 22.5UH CTC179DJ
L4403	227059	XX15054-200	*	COIL 320UH
L4404	227044	XX15046-25A	*	COIL 140UH
L4405	226458	XX15046-270	*	COIL 17.5MH
Q101	226973	XX15053-050		TRANSISTOR VHF
Q301	227008	XX15041-860		TRANSISTOR UHF RF
Q501	219028	XX15040-850		TRANSISTOR BS1 SWITCH
Q502	215495	XX11070-770		TRANSISTOR LOOP SPD UP
Q503	215496	XX30946-660		TRANSISTOR LOOP SPD UP
Q504	215495	XX11070-770		TRANSISTOR LOOP FILTER

REPLACEMENT PARTS (Continued)

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SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
Q505	219028	XX15040-850	TRANSISTOR BS4 SWITCH
Q506	219028	XX15040-850	TRANSISTOR BSM SWITCH
Q507	219028	XX15040-850	TRANSISTOR BSU SWITCH
Q508	219028	XX15040-850	TRANSISTOR BSV SWITCH
Q601	226981	XX90584-680	TRANSISTOR IF AMP
Q802	219028	XX15040-850	TRANSISTOR 1V BUFFER
Q2301	215495	XX11070-770	TRANSISTOR RF AGC BUFF
Q2302	215496	XX30946-660	TRANSISTOR VIDEO BUFF
Q2501	215496	XX30946-660	TRANSISTOR 6DB AMP
Q2502	215495	XX11070-770	TRANSISTOR PULSE SW
Q2503	215495	XX11070-770	TRANSISTOR BUFFER
Q2504	215495	XX11070-770	TRANSISTOR SVM BUFFER
Q2505	215496	XX30946-660	TRANSISTOR BUFFER
Q2506	215495	XX11070-770	TRANSISTOR DELAY EQUAL
Q2507	215496	XX30946-660	TRANSISTOR SVM LVL CONT
Q2508	215495	XX11070-770	TRANSISTOR SVM DEL AMP
Q2509	215495	XX11070-770	TRANSISTOR SVM BUFFER
Q2510	215495	XX11070-770	TRANSISTOR SVM LVL CONT
Q2511	215496	XX30946-660	TRANSISTOR BUFFER
Q2512	215495	XX11070-770	TRANSISTOR RF SW CONT
Q2513	215495	XX11070-770	TRANSISTOR 6DB AMP
Q2514	215496	XX30946-660	TRANSISTOR TEMP COMP
Q2515	215495	XX11070-770	TRANSISTOR GROUND SEP
Q2516	215496	XX30946-660	TRANSISTOR GROUND SEP
Q2517	215495	XX11070-770	TRANSISTOR SVM DELAY EQ
Q2518	215496	XX30946-660	TRANSISTOR SVM LVL CONT
Q2701	215496	XX30946-660	TRANSISTOR BLK STR DEF
Q2801	215495	XX11070-770	TRANSISTOR CHR CURR DRV
Q2802	215496	XX30946-660	TRANSISTOR CHR CURR DRV
Q2803	215495	XX11070-770	TRANSISTOR CHROMA BUFF
Q2901	215496	XX30946-660	TRANSISTOR RGB TEMP COM
Q2902	215495	XX11070-770	TRANSISTOR CRT PREDRVR
Q2903	215496	XX30946-660	TRANSISTOR CRT PREDRVR
Q2904	215496	XX30946-660	TRANSISTOR RED GAMMA CORRECTION
Q2905	215495	XX11070-770	TRANSISTOR CRT PREDRVR
Q2906	215496	XX30946-660	TRANSISTOR CRT PREDRVR
Q2907	215496	XX30946-660	TRANSISTOR GRN GAMMA CORRECTION
Q2908	215495	XX11070-770	TRANSISTOR CRT PREDRVR
Q2909	215496	XX30946-660	TRANSISTOR CRT PREDRVR
Q2910	215496	XX30946-660	TRANSISTOR BLU GAMMA CORRECTION
Q2912	215496	XX30946-660	TRANSISTOR RED BUFFER
Q2913	215496	XX30946-660	TRANSISTOR GRN BUFFER
Q2914	215496	XX30946-660	TRANSISTOR BLU BUFFER
Q3101	215496	XX30946-660	TRANSISTOR TUNING SYNC
Q3102	215495	XX11070-770	TRANSISTOR STDBY RESET
Q3103	215495	XX11070-770	TRANSISTOR STDBY DET
Q3104	215496	XX30946-660	TRANSISTOR STDBY DET
Q3105	215496	XX30946-660	TRANSISTOR EEPROM POWER
Q3106	215495	XX11070-770	TRANSISTOR RUN SWITCH
Q3107	215495	XX11070-770	TRANSISTOR DC DET RESET
Q3108	215495	XX11070-770	TRANSISTOR IM BUS CLOCK BUFFER
Q3109	215495	XX11070-770	TRANSISTOR IM BUS ENABL BUFFER
Q3200	215495	XX11070-770	TRANSISTOR LED DRV
Q3201	215496	XX30946-660	TRANSISTOR LED DRV
Q3301	215496	XX30946-660	TRANSISTOR OSD BUFFER
Q3302	215496	XX30946-660	TRANSISTOR OSD BUFFER
Q3303	215496	XX30946-660	TRANSISTOR OSD BUFFER
Q3304	215496	XX30946-660	TRANSISTOR HORIZ BUFF/ CLAMP
Q3306	215496	XX30946-660	TRANSISTOR CC BUFFER
Q3310	215495	XX11070-770	TRANSISTOR STBY PWR
Q3311	215495	XX11070-770	TRANSISTOR RUN DETECT
Q3312	215496	XX30946-660	TRANSISTOR RUN DETECT
Q3501	215496	XX30946-660	TRANSISTOR RESET CIR
Q3502	215495	XX11070-770	TRANSISTOR RESET CIR
Q3503	215495	XX11070-770	TRANSISTOR RESET CIR
Q3801	215495	XX11070-770	TRANSISTOR TUNER D/A
Q3802	215495	XX11070-770	TRANSISTOR TUNER D/A
Q4101	214640	XX50855-542	TRANSISTOR PS CHOPPER
Q4102	177789	XX90576-540	TRANSISTOR MAIN PS
Q4103	223704	XX50888-770	TRANSISTOR MAIN PS
Q4104	226975	XX15069-330	TRANSISTOR +12V REG
Q4105	157627	XX40440-530	TRANSISTOR +7.6V REG
Q4106	226975	XX15069-330	TRANSISTOR +5V REG
Q4107	226975	XX15069-330	TRANSISTOR +10.3V REG
Q4108	215496	XX30946-660	TRANSISTOR +7.6V SWITCH
Q4109	226971	XX15052-990	TRANSISTOR CHOPPER DRV
Q4110	226972	XX15053-000	TRANSISTOR CHOPPER DRV
Q4201	223704	XX50888-770	TRANSISTOR DEGAUSS
Q4301	223704	XX50888-770	TRANSISTOR HORIZ DRV SW
Q4302	190482	1A01101-01A	TRANSISTOR HORIZ DRV
Q4401	227010	XX15042-620	TRANSISTOR HORIZ OUT
Q4402	215495	XX11070-770	TRANSISTOR SVM
Q4501	215495	XX11070-770	TRANSISTOR VERT SYNC
Q4502	177788	XX70436-520	TRANSISTOR VERTICAL
Q4603	223704	XX50888-770	TRANSISTOR +5V STDBY
Q4720	226453	XX15053-290	TRANSISTOR SCR REG
Q4721	215496	XX30946-660	TRANSISTOR SCR REG
Q4722	215496	XX30946-660	TRANSISTOR SCR REG
Q4723	215495	XX11070-770	TRANSISTOR SCR REG
Q4724	226453	XX15053-290	TRANSISTOR SCR REG
Q4801	214641	XX60436-810	TRANSISTOR SIDE PIN CHOPPER
Q4802	145395	1417318-007	TRANSISTOR SIDE PIN RAMP
Q4803	223704	XX50888-770	TRANSISTOR INVERTER
Q4902	147665	XX50888-780 *	TRANSISTOR XRP
R101	205336	XX60444-250	RES CMF 1/10W 2% 300R
R102	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R103	197633	XX11066-480	RES CMF 1/10W 5% 47K
R104	197633	XX11066-480	RES CMF 1/10W 5% 47K
R105	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R107	205381	XX90574-330	RES CMF 1/10W 2% 470K
R108	192103	XX20471-900	RES CMF 1/10W 5% 39R
R109	205334	XX70434-050	RES CMF 1/10W 2% 150R
R111	175325	XX50882-950	RES CF 1/4W 5% 100R
R112	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R113	197633	XX11066-480	RES CMF 1/10W 5% 47K
R114	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R115	197633	XX11066-480	RES CMF 1/10W 5% 47K
R116	197633	XX11066-480	RES CMF 1/10W 5% 47K
R117	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R118	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R119	176818	XX30942-940	RES CMF 1/8W 5% 100R
R120	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R121	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R122	205414	XX70434-360	RES CMF 1/10W 10% 8.2R
R123	192101	XX40438-270	RES CMF 1/10W 5% 33R
R124	192101	XX40438-270	RES CMF 1/10W 5% 33R
R126	192084	XX50886-630	RES CMF 1/10W 5% 100K
R203	197633	XX11066-480	RES CMF 1/10W 5% 47K
R204	197633	XX11066-480	RES CMF 1/10W 5% 47K
R301	205411	XX11066-620	RES CMF 1/10W 10% 4.7R
R302	197633	XX11066-480	RES CMF 1/10W 5% 47K
R303	194917	XX60444-280	RES CMF 1/10W 2% 3K
R304	192100	XX20471-950	RES CMF 1/10W 5% 1K
R305	197633	XX11066-480	RES CMF 1/10W 5% 47K
R306	197906	XX90574-300	RES CMF 1/10W 2% 82K
R307	205365	XX70434-130	RES CMF 1/10W 2% 51K
R308	192084	XX50886-630	RES CMF 1/10W 5% 100K
R309	205330	XX40438-120	RES CMF 1/10W 2% 91R
R310	175412	XX50882-970	RES CF 1/4W 5% 470R
R311	175325	XX50882-950	RES CF 1/4W 5% 100R
R313	197633	XX11066-480	RES CMF 1/10W 5% 47K
R312	175322	XX40435-670	RES CF 1/4W 5% 47K
R314	192084	XX50886-630	RES CMF 1/10W 5% 100K
R315	197633	XX11066-480	RES CMF 1/10W 5% 47K
R316	175322	XX40435-670	RES CF 1/4W 5% 47K
R317	205330	XX40438-120	RES CMF 1/10W 2% 91R
R318	194926	XX90574-240	RES CMF 1/10W 2% 470R
R319	197633	XX11066-480	RES CMF 1/10W 5% 47K
R320	197633	XX11066-480	RES CMF 1/10W 5% 47K
R402	197633	XX11066-480	RES CMF 1/10W 5% 47K
R408	175322	XX40435-670	RES CF 1/4W 5% 47K
R409	175322	XX40435-670	RES CF 1/4W 5% 47K
R501	175055	XX11059-640	RES CF 1/4W 5% 1K
R502	175055	XX11059-640	RES CF 1/4W 5% 1K
R503	192084	XX50886-630	RES CMF 1/10W 5% 100K
R504	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R505	205365	XX70434-130	RES CMF 1/10W 2% 51K
R506	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R507	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R508	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R509	215216	XX30947-650	RES CMF 1/10W 1% 1M
R510	215214	XX40440-760	RES CMF 1/10W 1% 191K
R511	215215	XX20474-280	RES CMF 1/10W 1% 37.4K
R512	197904	XX40438-210	RES CMF 1/10W 2% 20K
R513	178287	XX11064-770	RES CMF 1/8W 5% 4.7K

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R514	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R515	192093	XX90574-320	RES CMF 1/10W 2% 220K
R516	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R517	181073	XX90573-600	RES CMF 1/8W 5% 7.5K
R518	176818	XX30942-940	RES CMF 1/8W 5% 100R
R601	192091	XX50886-580	RES CMF 1/10W 5% 2K
R602	192084	XX50886-630	RES CMF 1/10W 5% 100K
R603	192084	XX50886-630	RES CMF 1/10W 5% 100K
R604	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R605	194926	XX90574-240	RES CMF 1/10W 2% 470R
R606	176367	XX80439-630	RES CMF 1/8W 5% 47R
R609	205365	XX70434-130	RES CMF 1/10W 2% 51K
R610	192090	XX50886-720	RES CMF 1/10W 10% 3.3R
R701	205348	XX70434-100	RES CMF 1/10W 2% 7.5K
R702	195937	XX50886-610	RES CMF 1/10W 5% 10K
R704	205365	XX70434-130	RES CMF 1/10W 2% 51K
R705	192084	XX50886-630	RES CMF 1/10W 5% 100K
R706	205365	XX70434-130	RES CMF 1/10W 2% 51K
R707	155007	XX70433-140	RES CMF 1/8W 5% 1.2K
R708	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R709	192084	XX50886-630	RES CMF 1/10W 5% 100K
R807	178287	XX11064-770	RES CMF 1/8W 5% 4.7K
R808	205308	XX11066-180	RES CMF 1/10W 2% 10R
R821	192084	XX50886-630	RES CMF 1/10W 5% 100K
R822	192084	XX50886-630	RES CMF 1/10W 5% 100K
R1601	225704	XX30947-480	RES CMF 1/10W 1% 43.2K
R1602	225705	XX50889-590	RES CMF 1/10W 1% 61.9K
R1603	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R1605	205308	XX11066-180	RES CMF 1/10W 2% 10R
R1606	195938	XX80440-330	RES CMF 1/10W 2% 3.3K
R1607	194917	XX60444-280	RES CMF 1/10W 2% 3K
R1608	197907	XX60444-390	RES CMF 1/10W 5% 3.9K
R1609	175323	XX70430-580	RES CF 1/4W 5% 11K
R1610	205357	XX70434-110	RES CMF 1/10W 2% 22K
R1611	194926	XX90574-240	RES CMF 1/10W 2% 470R
R1612	194926	XX90574-240	RES CMF 1/10W 2% 470R
R1613	829013	XX90573-740 *	RES CF 1/4W 5% 13R
R1614	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1615	218508	XX70434-200	RES CMF 1/10W 5% 100R
R1616	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1617	218508	XX70434-200	RES CMF 1/10W 5% 100R
R1618	192084	XX50886-630	RES CMF 1/10W 5% 100K
R2201	197637	XX20471-940	RES CMF 1/10W 5% 680R
R2202	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2203	197907	XX60444-390	RES CMF 1/10W 5% 3.9K
R2204	192084	XX50886-630	RES CMF 1/10W 5% 100K
R2301	192088	XX70434-080	RES CMF 1/10W 2% 820R
R2302	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2304	205334	XX70434-050	RES CMF 1/10W 2% 150R
R2305	207835	XX20472-020	RES CMF 1/10W 5% 180K
R2307	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2308	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2309	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R2310	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2311	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2312	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2313	192091	XX50886-580	RES CMF 1/10W 5% 2K
R2314	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2315	192094	XX30944-220	RES CMF 1/10W 2% 100K
R2316	192094	XX30944-220	RES CMF 1/10W 2% 100K
R2317	192091	XX50886-580	RES CMF 1/10W 5% 2K
R2318	192835	XX90573-690	RES CMF 1/8W 2% 15K
R2319	192089	XX70434-060	RES CMF 1/10W 2% 220R
R2320	194926	XX90574-240	RES CMF 1/10W 2% 470R
R2321	182628	XX80439-740	RES CMF 1/8W 2% 470R
R2501	194926	XX90574-240	RES CMF 1/10W 2% 470R
R2502	194926	XX90574-240	RES CMF 1/10W 2% 470R
R2503	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2504	192089	XX70434-060	RES CMF 1/10W 2% 220R
R2505	205347	XX40438-190	RES CMF 1/10W 2% 6.2K
R2506	197903	XX20471-870	RES CMF 1/10W 2% 1.8K
R2507	197633	XX11066-480	RES CMF 1/10W 5% 47K
R2508	197907	XX60444-390	RES CMF 1/10W 5% 3.9K
R2509	205345	XX60444-290	RES CMF 1/10W 2% 5.1K
R2510	205345	XX60444-290	RES CMF 1/10W 2% 5.1K CTC179BJ,CK,CM,DK,DL
R2510	197628	XX40438-170	RES CMF 1/10W 2% 1.5K CTC179CJ,DJ
R2511	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2512	195929	XX50886-540	RES CMF 1/10W 5% 330R
R2513	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2514	218508	XX70434-200	RES CMF 1/10W 5% 100R

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R2515	175312	XX40435-780	RES CF 1/4W 2% 680R
R2516	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2517	205332	XX20471-850	RES CMF 1/10W 2% 120R
R2518	197637	XX20471-940	RES CMF 1/10W 5% 680R
R2519	192075	XX90574-360	RES CMF 1/10W 5% 51R
R2520	205348	XX70434-100	RES CMF 1/10W 2% 7.5K
R2521	197907	XX30944-160	RES CMF 1/10W 2% 3.9K
R2522	197471	XX11066-500	RES CMF 1/10W 5% 68K
R2523	205338	XX70434-070	RES CMF 1/10W 2% 560R
R2524	197623	XX20471-860	RES CMF 1/10W 2% 270R
R2525	195939	XX30944-140	RES CMF 1/10W 2% 680R
R2526	197623	XX20471-860	RES CMF 1/10W 2% 270R
R2527	194926	XX90574-240	RES CMF 1/10W 2% 470R
R2528	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R2529	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2530	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2531	205388	XX30944-380	RES CMF 1/10W 5% 910K CTC179BJ,CK,CM,DK,DL
R2531	205381	XX90574-330	RES CMF 1/10W 2% 470K CTC179CJ,DJ
R2532	176818	XX30942-940	RES CMF 1/8W 5% 100R
R2533	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2534	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R2535	205349	XX20471-890	RES CMF 1/10W 2% 8.2K
R2536	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R2537	192075	XX90574-360	RES CMF 1/10W 5% 51R
R2538	192088	XX70434-080	RES CMF 1/10W 2% 820R
R2539	205339	XX11066-260	RES CMF 1/10W 2% 620R
R2540	197621	XX90574-430	RES CMF 1/10W 5% 18K
R2541	205349	XX20471-890	RES CMF 1/10W 2% 8.2K
R2542	205308	XX11066-180	RES CMF 1/10W 2% 10R
R2543	181062	XX70433-310	RES CMF 1/8W 2% 51K
R2544	192097	XX30944-170	RES CMF 1/10W 2% 4.7K
R2545	175366	XX30939-650	RES CF 1/4W 2% 8.2K
R2546	193061	XX30943-190	RES CMF 1/8W 2% 27K
R2547	205357	XX70434-110	RES CMF 1/10W 2% 22K
R2548	205348	XX70434-100	RES CMF 1/10W 2% 7.5K
R2549	176813	XX80439-800	RES CMF 1/8W 2% 33K
R2550	195937	XX90574-280	RES CMF 1/10W 2% 10K
R2551	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2552	205354	XX30944-190	RES CMF 1/10W 2% 15K
R2553	200169	XX20471-990	RES CMF 1/10W 5% 12K
R2554	200169	XX20471-990	RES CMF 1/10W 5% 12K
R2555	829110	XX30943-330 *	RES CF 1/4W 5% 100R
R2556	175325	XX50882-950	RES CF 1/4W 5% 100R
R2557	175325	XX50882-950	RES CF 1/4W 5% 100R
R2558	192075	XX90574-360	RES CMF 1/10W 5% 51R
R2559	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2560	181419	XX90573-720 *	RES CF 1/4W 5% 2R
R2561	205245	XX40438-220	RES CMF 1/10W 2% 27K
R2562	205361	XX40438-230	RES CMF 1/10W 2% 36K CTC179BJ,CK,CM,DL
R2562	205360	XX11066-320	RES CMF 1/10W 2% 33K CTC179CJ,DJ
R2563	190462	XX40437-600	RES CMF 1/8W 2% 1K
R2564	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2565	195929	XX50886-540	RES CMF 1/10W 5% 330R
R2566	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2567	205347	XX40438-190	RES CMF 1/10W 2% 6.2K CTC179BJ,CK,CM,DL
R2567	205348	XX70434-100	RES CMF 1/10W 2% 7.5K CTC179CJ,DJ
R2568	175366	XX70430-570	RES CF 1/4W 5% 8.2K (SEE NOTE@)
R2568	179316	XX11059-940	RES CF 1/4W 2% 6.2K (SEE NOTE@)
R2569	205345	XX60444-290	RES CMF 1/10W 2% 5.1K
R2570	205344	XX70434-090	RES CMF 1/10W 2% 4.3K
R2571	205345	XX60444-290	RES CMF 1/10W 2% 5.1K
R2572	205345	XX60444-290	RES CMF 1/10W 2% 5.1K
R2573	205343	XX11066-280	RES CMF 1/10W 2% 3.6K CTC179BJ,CK,CM,DL
R2573	205342	XX20471-880	RES CMF 1/10W 2% 2.4K CTC179CJ,DJ
R2574	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2575	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2576	194917	XX60444-280	RES CMF 1/10W 2% 3K
R2577	192075	XX90574-360	RES CMF 1/10W 5% 51R
R2578	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2579	174348	XX30942-990	RES CMF 1/8W 5% 1K
R2580	205245	XX40438-220	RES CMF 1/10W 2% 27K
R2581	181072	XX70433-170	RES CMD 1/8W 5% 4.3K

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R2582	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2583	175055	XX11059-640	RES CF 1/4W 5% 1K
R2584	195929	XX11066-240	RES CMF 1/10W 2% 330R
R2585	192075	XX90574-360	RES CMF 1/10W 5% 51R
R2586	202585	XX40438-150	RES CMF 1/10W 2% 510R
R2587	197623	XX20471-860	RES CMF 1/10W 2% 270R
R2588	202585	XX40438-150	RES CMF 1/10W 2% 510R
R2589	192096	XX80440-320	RES CMF 1/10W 2% 2.2K
R2590	195929	XX11066-240	RES CMF 1/10W 2% 330R
R2591	182628	XX80439-740	RES CMF 1/8W 2% 470R
R2592	192088	XX70434-080	RES CMF 1/10W 2% 820R
R2593	175890	XX90571-100	RES CF 1/4W 5% 3.9KR
R2595	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2596	194916	XX30944-180	RES CMF 1/10W 2% 6.8K CTC179BJ,DJ,DK,DL
R2596	205354	XX30944-190	RES CMF 1/10W 2% 15K CTC179CJ,CK,CM
R2597	175055	XX11059-640	RES CF 1/4W 5% 1K
R2598	197637	XX20471-940	RES CMF 1/10W 5% 680R
R2599	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2701	192091	XX50886-580	RES CMF 1/10W 5% 2K
R2702	180329	XX80439-710	RES CMF 1/8W 5% 680K
R2703	197643	XX30944-320	RES CMF 1/10W 5% 9.1K
R2705	175412	XX50882-970	RES CF 1/4W 5% 470R
R2706	174364	XX60443-710	RES CMF 1/8W 5% 10K
R2707	175041	XX90571-120	RES CF 1/4W 5% 12K
R2708	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2712	175055	XX11059-640	RES CF 1/4W 5% 1K
R2713	175055	XX11059-640	RES CF 1/4W 5% 1K
R2714	205336	XX60444-250	RES CMF 1/10W 2% 300R
R2715	205369	XX50886-480	RES CMF 1/10W 2% 110K (SEE NOTE@)
R2715	192094	XX30944-220	RES CMF 1/10W 2% 100K (SEE NOTE@)
R2716	205336	XX60444-250	RES CMF 1/10W 2% 300R (SEE NOTE@)
R2716	194919	XX50886-510	RES CMF 1/10W 5% 62R (SEE NOTE@)
R2717	175325	XX50882-950	RES CF 1/4W 5% 100R
R2718	175325	XX50882-950	RES CF 1/4W 5% 100R
R2751	197642	XX90574-420	RES CMF 1/10W 5% 3K
R2752	194926	XX90574-240	RES CMF 1/10W 2% 470R
R2753	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2754	205340	XX11066-430	RES CMF 1/10W 5% 1.3K
R2755	205381	XX90574-330	RES CMF 1/10W 2% 470K
R2756	205374	XX30944-240	RES CMF 1/10W 2% 240K
R2801	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R2802	194926	XX90574-240	RES CMF 1/10W 2% 470R
R2803	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2804	205355	XX11066-310	RES CMF 1/10W 2% 16K
R2805	192089	XX70434-060	RES CMF 1/10W 2% 220R
R2806	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R2807	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2808	192090	XX50886-720	RES CMF 1/10W 10% 3.3R
R2809	192102	XX11066-250	RES CMF 1/10W 2% 390R
R2810	202586	XX50886-440	RES CMF 1/10W 2% 1.1K
R2811	205347	XX40438-190	RES CMF 1/10W 2% 6.2K
R2812	175325	XX50882-950	RES CF 1/4W 5% 100R
R2813	205348	XX70434-100	RES CMF 1/10W 2% 7.5K
R2814	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R2815	192102	XX11066-250	RES CMF 1/10W 2% 390R
R2816	192090	XX50886-720	RES CMF 1/10W 10% 3.3R
R2817	197638	XX30944-150	RES CMF 1/10W 2% 1K
R2818	197642	XX90574-420	RES CMF 1/10W 5% 3K
R2901	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R2902	175307	XX80436-970	RES CF 1/4W 5% 510R
R2904	175567	XX11059-880	RES CF 1/4W 2% 360R
R2905	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R2906	197624	XX90574-230	RES CMF 1/10W 2% 240R
R2907	205334	XX70434-050	RES CMF 1/10W 2% 150R (SEE NOTE@)
R2907	205331	XX60444-240	RES CMF 1/10W 2% 110R (SEE NOTE@)
R2908	181492	XX70433-260	RES CMF 1/8W 2% 220R (SEE NOTE@)
R2908	181491	XX30943-140	RES CMF 1/8W 2% 180R (SEE NOTE@)
R2909	175307	XX80436-970	RES CF 1/4W 5% 510R
R2911	205337	XX50886-420	RES CMF 1/10W 2% 360R
R2912	181482	XX60443-790	RES CMF 1/8W 2% 1.5K
R2913	197624	XX90574-230	RES CMF 1/10W 2% 240R
R2914	205334	XX70434-050	RES CMF 1/10W 2% 150R (SEE NOTE@)
R2914	205331	XX60444-240	RES CMF 1/10W 2% 110R (SEE NOTE@)
R2915	181492	XX70433-260	RES CMF 1/8W 2% 220R (SEE NOTE@)
R2915	181491	XX30943-140	RES CMF 1/8W 2% 180R (SEE NOTE@)
R2916	175307	XX80436-970	RES CF 1/4W 5% 510R
R2918	205337	XX50886-420	RES CMF 1/10W 2% 360R
R2919	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R2920	197624	XX90574-230	RES CMF 1/10W 2% 240R
R2921	205334	XX70434-050	RES CMF 1/10W 2% 150R (SEE NOTE@)
R2921	205331	XX60444-240	RES CMF 1/10W 2% 110R (SEE NOTE@)
R2922	192089	XX70434-060	RES CMF 1/10W 2% 220R (SEE NOTE@)
R2922	194918	XX11066-230	RES CMF 1/10W 2% 180R (SEE NOTE@)
R2926	197627	XX90574-250	RES CMF 1/10W 2% 910R
R2927	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R2928	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2929	197627	XX90574-250	RES CMF 1/10W 2% 910R
R2930	181482	XX60443-790	RES CMF 1/8W 2% 1.5K
R2931	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2932	197627	XX90574-250	RES CMF 1/10W 2% 910R
R2933	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R2934	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3101	192104	XX11066-420	RES CMF 1/10W 5% 390R
R3102	175325	XX50882-950	RES CF 1/4W 5% 100R
R3103	197904	XX40438-210	RES CMF 1/10W 2% 20K
R3104	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3105	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3106	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3107	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3108	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3109	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3110	174345	XX30942-970	RES CMF 1/8W 5% 390R
R3111	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3112	175321	XX11059-660	RES CF 1/4W 5% 2K
R3113	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R3114	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3115	201144	XX50886-670	RES CMF 1/10W 5% 1M
R3116	200169	XX20471-990	RES CMF 1/10W 5% 12K
R3117	175325	XX50882-950	RES CF 1/4W 5% 100R
R3118	174363	XX80439-720	RES CMF 1/8W 5% 2.7M
R3119	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R3120	205358	XX50886-450	RES CMF 1/10W 2% 24K
R3121	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3122	194926	XX90574-240	RES CMF 1/10W 2% 470R CTC179BJ,CK,CM
R3122	218508	XX70434-200	RES CMF 1/10W 5% 100R CTC179CJ,DJ,CK,DL
R3123	197633	XX11066-480	RES CMF 1/10W 5% 47K
R3124	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3125	205360	XX80440-420	RES CMF 1/10W 5% 33K
R3126	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3127	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3128	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3129	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3130	176816	XX60443-740	RES CMF 1/8W 5% 100K
R3131	197633	XX11066-480	RES CMF 1/10W 5% 47K
R3132	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3133	175412	XX50882-970	RES CF 1/4W 5% 470R
R3135	197633	XX11066-480	RES CMF 1/10W 5% 47K
R3137	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3138	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3139	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3140	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3141	200174	XX40438-340	RES CMF 1/10W 5% 200R
R3143	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3144	175325	XX50882-950	RES CF 1/4W 5% 100R
R3145	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3146	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3147	175325	XX50882-950	RES CF 1/4W 5% 100R
R3148	176813	XX11064-810	RES CMF 1/8W 5% 33K
R3149	205360	XX80440-420	RES CMF 1/10W 5% 33K
R3150	179378	XX90573-610	RES CMF 1/8W 5% 47K
R3151	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3201	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3202	192084	XX50886-630	RES CMF 1/10W 5% 100K

CTC179
REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R3203	174364	XX60443-710	RES CMF 1/8W 5% 10K
R3204	176816	XX60443-740	RES CMF 1/8W 5% 100K
R3205	174364	XX60443-710	RES CMF 1/8W 5% 10K
R3206	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3207	174364	XX60443-710	RES CMF 1/8W 5% 10K
R3208	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3210	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3211	176816	XX60443-740	RES CMF 1/8W 5% 100K
R3212	176813	XX80439-800	RES CMF 1/8W 2% 33K
R3213	195929	XX50886-540	RES CMF 1/10W 5% 330R
R3301	192081	XX50886-590	RES CMF 1/10W 5% 2.7K
R3302	205337	XX50886-420	RES CMF 1/10W 2% 360R
R3303	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3304	175367	XX40435-630	RES CF 1/4W 5% 1.5K
R3305	192081	XX50886-590	RES CMF 1/10W 5% 2.7K
R3306	205337	XX50886-420	RES CMF 1/10W 2% 360R
R3307	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3308	175367	XX40435-630	RES CF 1/4W 5% 1.5K
R3309	192081	XX50886-590	RES CMF 1/10W 5% 2.7K
R3310	205337	XX50886-420	RES CMF 1/10W 2% 360R
R3311	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3312	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R3313	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R3315	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3316	205345	XX60444-290	RES CMF 1/10W 2% 5.1K
R3317	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R3318	181065	XX11064-780	RES CMF 1/8W 5% 8.2K
R3319	175315	XX70430-600	RES CF 1/4W 5% 51K
R3320	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3321	175055	XX11059-640	RES CF 1/4W 5% 1K
R3322	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3323	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3324	192084	XX50886-630	RES CMF 1/10W 5% 100K CTC179BJ,CM
R3324	176816	XX60443-740	RES CMF 1/8W 5% 100K CTC179CJ,CK,DJ, DK,DL
R3325	175353	XX20469-480	RES CF 1/4W 5% 4.3K
R3326	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R3327	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3328	205308	XX11066-180	RES CMF 1/10W 2% 10R
R3329	205308	XX11066-180	RES CMF 1/10W 2% 10R
R3330	197638	XX30944-150	RES CMF 1/10W 2% 1K
R3331	205308	XX11066-180	RES CMF 1/10W 2% 10R
R3332	200186	XX30939-360	RES CF 1/4W 5% 10R
R3333	205308	XX11066-180	RES CMF 1/10W 2% 10R
R3334	192086	XX80440-370	RES CMF 1/10W 5% 150R
R3335	205308	XX30944-250	RES CMF 1/10W 5% 10R
R3336	192086	XX80440-370	RES CMF 1/10W 5% 150R
R3338	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3341	215200	XX50886-560	RES CMF 1/10W 5% 750R
R3342	215200	XX50886-560	RES CMF 1/10W 5% 750R
R3343	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3344	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3353	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3354	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3355	176816	XX60443-740	RES CMF 1/8W 5% 100K
R3356	192835	XX40437-550	RES CMF 1/8W 5% 15K
R3357	174364	XX60443-710	RES CMF 1/8W 5% 10K
R3358	218508	XX70434-200	RES CMF 1/10W 5% 100R CTC179CJ,DJ,DK,DL
R3358	205308	XX11066-180	RES CMF 1/10W 2% 10R CTC179BJ,CK,CM
R3359	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3360	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3361	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3362	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3364	207839	XX80440-430	RES CMF 1/10W 5% 43K
R3365	205334	XX70434-050	RES CMF 1/10W 2% 150R
R3366	207839	XX80440-430	RES CMF 1/10W 5% 43K
R3367	205334	XX70434-050	RES CMF 1/10W 2% 150R
R3368	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3369	190462	XX40437-600	RES CMF 1/8W 2% 1K
R3370	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3371	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3372	194926	XX90574-240	RES CMF 1/10W 2% 470R
R3373	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3374	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3375	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3376	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3377	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3401	149602	XX50881-810 *	RES CC 1/4W 5% 100R
R3402	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3403	149602	XX50881-810 *	RES CC 1/4W 5% 100R
R3404	218508	XX70434-200	RES CMF 1/10W 5% 100R
R3501	205381	XX90574-330	RES CMF 1/10W 2% 470K
R3502	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3503	197904	XX40438-210	RES CMF 1/10W 2% 20K
R3504	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3505	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3506	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3507	195937	XX50886-610	RES CMF 1/10W 5% 10K
R3508	192100	XX20471-950	RES CMF 1/10W 5% 1K
R3509	205381	XX90574-330	RES CMF 1/10W 2% 470K
R3801	215218	XX70437-540	RES CMF 1/8W 1% 26.1K
R3802	215217	XX80443-080	RES CMF 1/10W 1% 10K
R3803	215218	XX70437-540	RES CMF 1/8W 1% 26.1K
R3804	215217	XX80443-080	RES CMF 1/10W 1% 10K
R3805	215218	XX70437-540	RES CMF 1/8W 1% 26.1K
R3806	215217	XX80443-080	RES CMF 1/10W 1% 10K
R3807	215219	XX11071-220	RES CMF 1/10W 1% 14.3K
R3808	217317	XX50889-280	RES CMF 1/10W 1% 453R
R3809	192088	XX70434-080	RES CMF 1/10W 2% 820R
R3810	215199	XX90576-860	RES CMF 1/10W 1% 15.8K
R3811	215221	XX40440-830	RES CMF 1/10W 1% 100K
R3812	215199	XX90576-860	RES CMF 1/10W 1% 15.8K
R3813	215221	XX40440-830	RES CMF 1/10W 1% 100K
R3814	215199	XX90576-860	RES CMF 1/10W 1% 15.8K
R3815	215221	XX40440-830	RES CMF 1/10W 1% 100K
R3816	205245	XX30944-340	RES CMF 1/10W 5% 27K
R3817	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3818	200180	XX20472-010	RES CMF 1/10W 5% 91K
R3819	205245	XX30944-340	RES CMF 1/10W 5% 27K
R3820	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3821	200180	XX20472-010	RES CMF 1/10W 5% 91K
R3822	205245	XX30944-340	RES CMF 1/10W 5% 27K
R3823	192084	XX50886-630	RES CMF 1/10W 5% 100K
R3824	200180	XX20472-010	RES CMF 1/10W 5% 91K
R3825	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R3826	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R3827	175355	XX11059-750	RES CF 1/4W 5% 300K
R3828	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R3829	175355	XX11059-750	RES CF 1/4W 5% 300K
R3832	205298	XX30943-050	RES CMF 1/8W 5% 130K
R3833	205371	XX30944-350	RES CMF 1/10W 5% 130K
R4001	200444	XX11064-570 *	RES WW 15W 10% 1.8R
R4002	217662	XX15041-110 *	RES CC 1/2W 10% 2.7M
R4003	179784	XX70431-620 *	RES MF 1W 5% 68K
R4100	227060	XX15057-780	RES MF 1/2W 5% .51R
R4101	175347	XX90571-470	RES CF 1/2W 5% 10K
R4102	192098	XX60444-350	RES CMF 1/10W 5% 47R
R4103	227086	XX50888-840 *	RES MF 2W 5% 1.8R
R4104	830A20	XX80441-140	RES CF 1/2W 5% 2R (SEE NOTE@)
R4104	830A30	XX50888-840	RES CF 1/2W 5% 3R CTC179BJ (SEE NOTE@)
R4104	830A24	XX30945-180	RES CF 1/2W 5% 2.4R CTC179CJ,CK,CM,DJ, DK,DL (SEE NOTE@)
R4105	194926	XX90574-240	RES CMF 1/10W 2% 470R
R4106	175317	XX30939-480	RES CF 1/4W 5% 10K
R4107	175758	XX80437-010	RES CF 1/4W 5% 1.8K
R4108	205278	XX50885-570	RES CMF 1/8W 5% 27R
R4109	162005	XX90573-620	RES CMF 1/8W 5% 75K
R4110	190462	XX40437-600	RES CMF 1/8W 2% 1K
R4111	177816	XX90571-160	RES CF 1/4W 5% 390K
R4112	228937	XX60442-240	RES MF 1/4W 1% 1.82K CTC179BJ
R4112	227037	XX11060-860	RES MF 1/4W 1% 1.74K CTC179CJ,CK,CM
R4112	190715	XX60442-230	RES MF 1/4W 1% 1.65K CTC179DJ,DL
R4113	190525	XX20472-210 *	RES CONTROL REG B+ ADJ
R4114	176506	XX60442-380	RES MF 1/4W 1% 45.3K
R4116	174364	XX60443-710	RES CMF 1/8W 5% 10K
R4117	175417	XX60441-570	RES CF 1/4W 5% 5.1K
R4118	195937	XX50886-610	RES CMF 1/10W 5% 10K
R4119	197904	XX40438-210	RES CMF 1/10W 2% 20K
R4120	200186	XX30939-360	RES CF 1/4W 5% 10R
R4121	176910	XX60442-580 *	RES MF 1W 5% 56R
R4122	179813	XX20470-870 *	RES WW 7W 5% 3.9R
R4123	205411	XX11066-620	RES CMF 1/10W 10% 4.7R
R4124	226781	XX11061-590	RES MF 1W 5% 160R

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
R4126	175754	XX11059-560		RES CF 1/4W 5% 33R
R4127	120595	XX40438-950	*	RES CF 1/2W 5% 8.2R
R4128	175043	XX50882-980		RES CF 1/4W 5% 820R
R4129	200185	XX60443-100	*	RES WW 7W 5% 330R
R4130	176793	XX11060-100		RES CF 1/2W 5% 470R
R4131	190555	XX90572-160	*	RES MF 1W 5% 220R
R4132	179786	XX80438-170	*	RES MF 2W 5% 22R
R4133	200189	XX40436-310	*	RES MF 1/4W 1% 53.6K
R4134	192084	XX50886-630		RES CMF 1/10W 5% 100K
R4137	227821	XX20474-080		RES MF 2W 5% 2.7R
R4138	175312	XX11059-630		RES CF 1/4W 5% 680R
R4140	183140	XX20470-270	*	RES MF 1W 5% 1R
R4141	175781	XX60442-550		RES MF 1W 5% 10R
R4145	195937	XX50886-610		RES CMF 1/10W 5% 10K
R4150	218508	XX70434-200		RES CMF 1/10W 5%
R4190	176796	XX11060-080		RES CF 1/2W 5% 100R
R4191	200186	XX30939-360		RES CF 1/4W 5% 10R
R4192	218508	XX70434-200		RES CMF 1/10W 5% 100R
R4193	195937	XX50886-610		RES CMF 1/10W 5% 10K
R4195	829110	XX80435-850		RES CC 1/4W 10% 100R
R4196	192097	XX30944-310		RES CMF 1/10W 5% 4.7K
R4197	192089	XX70434-060		RES CMF 1/10W 2% 220R
R4198	176366	XX90573-580		RES CMF 1/8W 5% 2.2K
R4199	177599	XX30939-410		RES CF 1/4W 5% 91R
R4201	218508	XX70434-200		RES CMF 1/10W 5% 100R
R4202	181484	XX50885-640		RES CMF 1/8W 5% 1.8K
R4203	205346	XX80440-400		RES CMF 1/10W 5% 5.6K
R4304	175055	XX11059-640		RES CF 1/4W 5% 1K
R4305	175324	XX20469-450		RES CF 1/4W 2% 220R
R4306	205329	XX90574-210		RES CMF 1/10W 2% 82R
R4307	227090	XX60442-980	*	RES WW 3W 5% 75R
R4308	227249	XX70430-830		RES CF 1/2W 5% 91R
R4309	192098	XX60444-350		RES CMF 1/10W 5% 47R
R4351	192100	XX20471-950		RES CMF 1/10W 5% 1K
R4352	192100	XX20471-950		RES CMF 1/10W 5% 1K
R4353	192100	XX20471-950		RES CMF 1/10W 5% 1K
R4355	192100	XX20471-950		RES CMF 1/10W 5% 1K
R4356	205346	XX80440-400		RES CMF 1/10W 5% 5.6K
R4357	192084	XX50886-630		RES CMF 1/10W 5% 100K
R4358	197628	XX40438-170		RES CMF 1/10W 2% 1.5K
R4359	190462	XX40437-600		RES CMF 1/8W 2% 1K
R4360	192100	XX20471-950		RES CMF 1/10W 5% 1K
R4401	830047	XX90571-420		RES CF 1/2W 5% 47R
R4402	227011	XX15043-010	*	RES CONTROL HORIZ CENTERING
R4403	175349	XX30940-790	*	RES MF 1W 5% 820R
R4404	193108	XX70432-160		RES WW 2W 10% .68R
R4407	190559	XX70431-820	*	RES MF 3W 5% 2.2K
R4409	175317	XX70430-740	*	RES CF 1/4W 2% 10K
R4410	175352	XX30939-630	*	RES CF 1/4W 2% 3.3K
R4411	218508	XX70434-200		RES CMF 1/10W 5% 100R
R4412	192095	XX11066-330		RES CMF 1/10W 2% 56K
R4413	197907	XX30944-160		RES CMF 1/10W 2% 3.9K
R4414	192096	XX80440-320		RES CMF 1/10W 2% 2.2K
R4415	831210	XX80438-030		RES MF 1W 5% 1K
R4416	175322	XX60441-740		RES CF 1/4W 2% 47K
R4501	179798	XX90571-440		RES CF 1/2W 5% 820R CTC179BJ,DJ,DL
R4501	227251	XX80437-170		RES CF 1/2W 5% 430R CTC179CJ,CK,CM,DK
R4502	179781	XX20470-330		RES MF 1W 5% 300R
R4503	205354	XX30944-190		RES CMF 1/10W 2% 15K
R4504	205345	XX60444-290		RES CMF 1/10W 2% 5.1K
R4505	175350	XX30939-800		RES CF 1/2W 5% 1K
R4507	178619	XX30940-690	*	RES MF 1W 5% 1.5R
R4508	227094	XX70431-780	*	RES MF 3W 5% 180R
R4509	227094	XX70431-780	*	RES MF 3W 5% 180R
R4510	227252	XX80437-300		RES CF 1/2W 2% 2K CTC179BJ,DJ,DL
R4510	179253	XX40436-040		RES CF 1/2W 2% 1.6K CTC179CJ,CK,CM,DK
R4511	145384	XX70432-060	*	RES WW 2W 5% 1R
R4512	227252	XX80437-300		RES CF 1/2W 2% 2K
R4516	175317	XX30939-480		RES CF 1/4W 5% 10K
R4518	831143	XX50883-990		RES MF 1W 5% 430R CTC179BJ,CJ,CK, CM,DK
R4518	227316	XX50884-790		RES WW 3W 5% 180R CTC179DJ,DL
R4519	831B91	XX15042-780		RES MF 1W 5% .91R CTC179BJ

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
R4519	227022	XX15042-760		RES MF 1W 5% .75R CTC179CJ,CK, CM,DK
R4519	227314	XX15042-740		RES MF 1W 5% .56R CTC179DJ,DL
R4591	197633	XX11066-480		RES CMF 1/10W 5% 47K
R4609	175321	XX11059-660		RES CF 1/4W 5% 2K
R4610	176457	XX11059-780		RES CF 1/4W 5% 1M
R4700	228910	XX15043-44A	*	RES CONTROL VERTICAL CTC179BJ,CK
R4700	227062	XX15061-960	*	RES CONTROL VERTICAL CTC179CJ,DJ,DK,DL
R4700	229881	XX15043-45A	*	RES CONTROL VERTICAL CTC179CM
R4703	227091	XX60443-010	*	RES WW 3W 5% 2.2R CTC179BJ,CJ,CK,DJ, DK,DL
R4703	229882	XX20470-690	*	RES WW 3W 5% 2.7R CTC179CM
R4720	175042	XX20469-460		RES CF 1/4W 5% 2.2K (SEE NOTE@)
R4720	206037	XX60440-850		RES CC 1/2W 5% 27K (SEE NOTE@)
R4721	175042	XX20469-460		RES CF 1/4W 5% 2.2K
R4722	830512	XX15076-930		RES CF 1/2W 5% 1.2M CTC179BJ,CK
R4722	830522	XX15076-960		RES CF 1/4W 5% 2.2M CTC179CJ,DJ,DK,DL
R4722	229883	XX90571-530		RES CF 1/2W 5% 1M CTC179CM
R4723	192094	XX30944-220		RES CMF 1/10W 2% 100K CTC179BJ,CK
R4723	205377	XX40438-240		RES CMF 1/10W 2% 330K CTC179CJ,DJ,DK,DL
R4723	205370	XX70434-150		RES CMF 1/10W 2% 120K CTC179CM
R4724	195931	XX90574-310		RES CMF 1/10W 2% 150K
R4725	177816	XX90571-160		RES CF 1/4W 5% 390K
R4726	223353	XX70430-730		RES CF 1/4W 2% 6.8K CTC179BJ,CK,CM
R4726	175417	XX30939-640		RES CF 1/4W 2% 5.1K CTC179CJ,DJ,DK,DL
R4727	205345	XX60444-290		RES CMF 1/10W 2% 5.1K
R4728	195937	XX90574-280		RES CMF 1/10W 2% 10K
R4729	205345	XX60444-290		RES CMF 1/10W 2% 5.1K
R4730	175417	XX30939-640		RES CF 1/4W 2% 5.1K CTC179BJ,CK,CM
R4730	175761	XX11059-950		RES CF 1/4W 2% 7.5K CTC179CJ,DJ,DK,DL
R4731	202585	XX40438-150		RES CMF 1/10W 2% 510R CTC179BJ,CK
R4731	197638	XX30944-150		RES CMF 1/10W 2% 1K CTC179CJ,DJ,DK,DL
R4731	202914	XX40438-160		RES CMF 1/10W 2% 750R CTC179CM
R4732	195929	XX50886-540		RES CMF 1/10W 5% 330R
R4733	195929	XX50886-540		RES CMF 1/10W 5% 330R
R4735	195728	XX20469-540		RES CF 1/4W 5% 3.3M
R4736	195929	XX50886-540		RES CMF 1/10W 5% 330R
R4737	830512	XX15076-930		RES CF 1/2W 5% 1.2M CTC179BJ,CK
R4737	195933	XX80437-050		RES CF 1/4W 5% 2.2M CTC179CJ,DJ,DK,DL
R4737	229883	XX90571-530		RES CF 1/2W 5% 1M CTC179CM
R4738	175042	XX20469-460		RES CF 1/4W 5% 2.2K
R4739	195929	XX50886-540		RES CMF 1/10W 5% 330R
R4785	227079	XX40434-980	*	RES CC 1/2W 5% 100K
R4788	829356	XX70429-600		RES CC 1/4W 5% 56K
R4789	830282	XX80436-190		RES CC 1/2W 5% 8.2K
R4790	830318	XX40434-970	*	RES CC 1/2W 5% 18K CTC179BJ,CK,CM
R4790	206037	XX60440-850	*	RES CC 1/2W 5% 27K CTC179CJ,DJ,DK,DL
R4791	228938	XX70431-200		RES MF 1/4W 1% 953R CTC179BJ
R4791	226780	XX11060-820		RES MF 1/4W 1% 909R CTC179CJ
R4791	179753	XX20470-040		RES MF 1/4W 1% 1K CTC179CK,CM,DK
R4791	227312	XX11060-800		RES MF 1/4W 1% 787R CTC179DJ,DL

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
R4792	192100	XX20471-950		RES CMF 1/10W 5% 1K
R4793	830530	XX90570-270		RES CC 1/2W 5% 3M CTC179BJ
R4793	227268	XX90570-280		RES CC 1/2W 5% 3.9M CTC179CJ,CK,CM, DJ,DK,DL
R4795	175055	XX11059-640		RES CF 1/4W 5% 1K
R4803	175041	XX90571-120		RES CF 1/4W 5% 12K (SEE NOTE@)
R4803	200169	XX20471-990		RES CMF 1/10W 5% 12K (SEE NOTE@)
R4805	190469	XX11061-120		RES MF 1/4W 1% 39.2K
R4806	227085	XX50883-800		RES MF 1/4W 1% 49.9K
R4807	205357	XX70434-110		RES CMF 1/10W 2% 22K
R4810	227270	XX90576-580		RES MF 2W 5% 200R
R4811	205374	XX30944-240		RES CMF 1/10W 2% 240K
R4812	180175	XX80442-870		RES MF 2W 5% 1K
R4813	208430	XX30939-790		RES CF 1/2W 5% 910R
R4814	176796	XX11060-080		RES CF 1/2W 5% 100R
R4815	194923	XX90574-380		RES CMF 1/10W 5% 200R
R4816	197640	XX60444-420		RES CMF 1/10W 5% 150K
R4817	175055	XX11059-640		RES CF 1/4W 5% 1K
R4818	175315	XX20469-740		RES CF 1/4W 5% 51K
R4819	197622	XX40438-320		RES CMF 1/10W 5% 51K
R4820	201143	XX20471-980		RES CMF 1/10W 5% 6.2K
R4821	197627	XX90574-410		RES CMF 1/10W 5% 910R
R4822	205245	XX30944-340		RES CMF 1/10W 5% 27K
R4823	207836	XX40438-330		RES CMF 1/10W 5% 75K
R4824	197471	XX11066-500		RES CMF 1/10W 5% 68K
R4851	175055	XX11059-640		RES CF 1/4W 5% 1K
R4901	227267	XX90571-590		RES CF 1/2W 2% 2.2K
R4903	175357	XX20469-570	*	RES CF 1/4W 2% 22R
R4904	197470	XX30944-330		RES CMF 1/10W 5% 20K CTC179BJ,CK,CM,DK
R4904	175351	XX40435-660		RES CF 1/4W 5% 20K CTC179CJ,DJ,DL
R4905	228939	XX11061-110		RES MF 1/4W 1% 34.8K CTC179BJ
R4905	227076	XX30940-440	*	RES MF 1/4W 1% 35.7K CTC179CJ
R4905	220197	XX90571-960	*	RES MF 1/4W 1% 38.3K CTC179CK,DK
R4905	219026	XX30940-450	*	RES MF 1/4W 1% 40.2K CTC179CM
R4905	227317	XX70431-370	*	RES MF 1/4W 1% 37.4K CTC179DJ
R4905	190469	XX11061-120	*	RES MF 1/4W 1% 39.2K CTC179DL
R4906	205305	XX30943-070		RES CMF 1/8W 5% 360K
R4907	196081	XX30940-410	*	RES MF 1/4W 1% 26.7K
R4908	181060	XX60443-720		RES CMF 1/8W 5% 16K CTC179BJ,CK,CM, DK,DL
R4908	181073	XX90573-600		RES CMF 1/8W 5% 7.5K CTC179CJ,DJ
R4909	197628	XX40438-170	*	RES CMF 1/10W 2% 1.5K CTC179BJ,CK,CM,DK
R4909	175367	XX30939-610	*	RES CF 1/4W 2% 1.5K CTC179CJ,DJ,DL
R4910	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179BJ,CK,CM, DK,DL
R4910	195937	XX50886-610		RES CMF 1/10W 5% 10K CTC179CJ,DJ
R4912	207883	XX30944-700	*	RES CONTROL XRP ADJ
R4915	176367	XX80439-630		RES CMF 1/8W 5% 47R
RN4501	215499	XX11039-481		RESISTOR NETWORK
RT4201	207768	XX30948-690	*	THERMISTOR
SF2301	227024	XX15045-90A		FILTER ACOUSTIC WAVE
SF2302	227023	XX15045-910		FILTER ACOUSTIC WAVE
SW801	227020	XX15041-950		RELAY SWITCHING
SW4401	190488	XX15042-33A		RES CONTROL HORIZ CENTERING SWITCH
T801	227015	XX15062-920		TRANSFORMER RF SPLIT
T4101	228940	2G25036-C1B	*	TRANSFORMER SMT CTC179BJ
T4101	227272	2G25037-E2A	*	TRANSFORMER SMT CTC179CJ,CK,CM,DK
T4101	227319	2G25037-C5A	*	TRANSFORMER SMT CTC179DJ,DL
T4102	227016	XX60411-230	*	TRANSFORMER CURR SENSE
T4103	227013	XX15052-960	*	TRANSFORMER BASE DRIVE
T4301	227018	XX15040-65B	*	TRANSFORMER HOT BASE DR
T4401	228941	2G25032-A2A	*	TRANSFORMER IHVT CTC179BJ
T4401	227271	2G25033-B1B	*	TRANSFORMER IHVT CTC179CJ,CK,DK
T4401	229880	2G25031-A2A	*	TRANSFORMER IHVT CTC179CM
T4401	227318	2G25035-C1C	*	TRANSFORMER IHVT CTC179DJ,DL
T4601	225708	XX15045-220	*	TRANSFORMER STANDBY
U501	215533	XX11070-820		IC PHASE LOCK LOOP
U701	227007	XX15041-330		IC MIXER/OSC
U1600	225700	XX15043-290		IC STEREO DECODER
U2001	226967	XX15000-58A	*	IC T2 CHIP
U2501	226968	XX15046-040		IC EDGE REPLACEMENT
U2502	226969	XX15046-750		IC BUS EXPANDER
U3101				IC MICROPROCESSOR- PART OF EEPROM KIT U3102
U3102	229779	2F51015-02B		IC EEPROM KIT CTC179BJ,CJ,DJ (MICRO MARKED -97H OR BEFORE)
U3102	229780	2F51015-04B		IC EEPROM KIT CTC179BJ,CJ,DJ (MICRO MARKED -97I OR LATER)
U3102	229781	2F51015-03B		IC EEPROM KIT CTC179CK,CM,DK,DL (MICRO MARKED -97H OR BEFORE)
U3102	229782	2F51015-05B		IC EEPROM KIT CTC179CK,CM,DK,DL (MICRO MARKED -97I OR LATER)
U3103	226976	XX46061-900		IC BUS ISOLATOR
U3801	215534	XX11097-150		IC TUNER DIA OP AMP
U4101	226974	XX15065-350		IC PVM
U4102	227012	XX15052-550		IC -12V REGULATOR
U4501	215531	XX90576-550		IC VERTICAL OUTPUT
U4601	162394	XX46007-600		IC +12V REGULATOR
U4801	200420	1A51123-01A		IC SIDE PIN
Y501	182839	XX80444-040		CRYSTAL 4MHZ
Y2801	161235	XX40441-850		CRYSTAL 3.58MHZ
Y3101	217322	XX10047-940		CRYSTAL 8MHZ
Y4190	227064	XX15062-190		RESONATOR 507.5KHZ
	227057	XX15069-370		BRACKET, PIP SUPPORT
	227065	XX15063-580	*	CABLE, AC POWER
	176642	2841606-001		CLIP, F4001
	173269	2863229-001		CLIP, CR4401/Q4104/ Q4106/Q4107/Q4757/ Q4801/U4501/U4601
	227328	2862928-04A		CLIP, Q4101
	227329	2862928-05A		CLIP, Q4401
	210684	1B92101-02A	*	CONNECTOR, ANODE CUP CONNECTOR, F TYPE ANTEN J801/802 S/N 215543
	227054	XX15042-80C		COVER, TUNER BOTTOM
	227058	XX15052-52A		COVER, TUNER TOP W/HOLE
	227819	XX15052-50C		FRAME, TUNER TOP CTC179BJ,CJ,DJ,DL
	227822	XX15052-51C		FRAME, TUNER TOP CTC179CK,CM,DK
	214614	2844624-13B		INSULATOR, Q4101/Q4104/ Q4106/Q4107
	214613	2844624-12A		INSULATOR, Q4801
	228936	XX15053-02B	*	OVERLAY, JACK PANEL CTC179BJ
	229879	XX15081-310	*	OVERLAY, JACK PANEL CTC179CJ,CK,CM
	227009	XX15042-49B	*	OVERLAY, JACK PANEL CTC179DJ,DL

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
	227820	XX15053-01B		OVERLAY, JACK PANEL CTC179DK
	227273	2R14001-01B	*	PANEL, JACK 15 JACK CTC179CJ,DJ,DK,DL
	228942	2R14001-02A	*	PANEL, JACK CTC179BJ,CK,CM
	139301	1479290-001		RETAINER, BEAD CHAIN
	215572	XX10010-020		RIVET, PUSH-JACK PANEL
	227246	XX67183-900		SOCKET, U3101
	227290	XX15042-390	*	SUPPORT, KINE DRIVE CBA
	227274	2R20002-01C		TRAY, CHASSIS
	154397	2870460-001		WIRE SADDLE .66 HIGH
	154385	2870929-001		WIRE TIE, TWIST END

DYN FOCUS CBA

	226787	2F40009-501	●	CIRCUIT COMPLETE CTC179CJ,DJ,DK,DL
C4720	190498	XX70427-990		CAP LYTC 47UF M 63V
C4721	190498	XX70427-990		CAP LYTC 47UF M 63V
C4722	227378	XX60450-900	*	CAP POLY 2800PF E 1.6KV
C4724	190552	XX70427-610		CAPCC .1UF K X7R 50V
C4725	190552	XX70427-610		CAPCC .1UF K X7R 50V
C4726	151578	XX11054-710		CAP LYTC 33UF M 35V
C4727	227378	XX60450-900	*	CAP POLY 2800PF E 1.6KV
C4728	193031	XX40432-820		CAPCC .056UF K X7R 50V
C4729	181460	XX50879-870		CAPCC 1000PF K X7R 50V
C4730	227375	XX15065-060		CAPCD 180PF J SL 2KV
CR4703	164874	XX30946-680		DIODE
CR4704	227379	XX90577-450	*	DIODE ZENER 5.6V 1.3W
CR4720	164874	XX30946-680		DIODE
CR4721	164874	XX30946-680		DIODE
CR4726	215487	XX50890-650		DIODE ZENER 6.8V .4W
CR4727	164874	XX30946-680		DIODE
JC101	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC102	205408	XX80440-510		RES CMF 1/10W 10% .0R
JC103	205408	XX80440-510		RES CMF 1/10W 10% .0R
Q4701	215496	XX30946-660		TRANSISTOR 6.2V CLAMP
Q4702	215495	XX11070-770		TRANSISTOR BUFFER
Q4703	215495	XX11070-770		TRANSISTOR PREAMP
Q4704	226453	XX15053-290		TRANSISTOR HV AMP
Q4705	215495	XX11070-770		TRANSISTOR DIFF AMP
Q4706	215495	XX11070-770		TRANSISTOR PRE AMP
Q4707	226453	XX15053-290		TRANSISTOR PULL UP
R4712	197638	XX30944-150		RES CMF 1/10W 2% 1K
R4715	197638	XX30944-150		RES CMF 1/10W 2% 1K
R4716	197638	XX30944-150		RES CMF 1/10W 2% 1K
R4717	829110	XX30943-330	*	RES CF 1/4W 5% 100R
R4718	197638	XX30944-150		RES CMF 1/10W 2% 1K
R4719	197638	XX30944-150		RES CMF 1/10W 2% 1K
R4720	197638	XX30944-150		RES CMF 1/10W 2% 1K
R4721	181080	XX90573-590		RES CMF 1/8W 5% 3.3K
R4722	175352	XX50883-000		RES CFFP 1/4W 5% 3.3K
R4723	175351	XX30939-660		RES CF 1/4W 2% 20K
R4724	227377	XX60441-760		RES CF 1/2W 10% 2.2M
R4725	197470	XX30944-330		RES CMF 1/10W 5% 20K
R4726	830191	XX80440-100	*	RES CF 1/2W 5% 910R
R4727	197470	XX30944-330		RES CMF 1/10W 5% 20K
R4729	175317	XX30939-480		RES CF 1/4W 5% 10K
R4730	176782	XX50883-260		RES CF 1/2W 5% 150K
R4731	175307	XX80436-970		RES CF 1/4W 5% 510R
R4732	194920	XX90574-260		RES CMF 1/10W 2% 1.2K
R4733	205347	XX40438-190		RES CMF 1/10W 2% 6.2K
R4734	227374	XX11057-960	*	RES CC 1/2W 10% 10K
R4738	227376	XX50884-770	*	RES WW 3W 5% 30R
R4739	197907	XX30944-160		RES CMF 1/10W 2% 3.9K
R4740	829191	XX40437-720	*	RES CF 1/4W 5% 910R
R4741	175055	XX11059-640		RES CF 1/4W 5% 1K
R4742	175321	XX11059-660		RES CF 1/4W 5% 2K
T4701	210878	XX40452-73A	*	TRANSFORMER DRIVER
U4701	223807	XX46089-300		IC V SIGNAL AMP

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
	227380	2R04007-01A		BRACKET, FOCUS

FRONT PANEL (FPA) CBA

	226784	2F42011-01A		CIRCUIT COMPLETE CTC179BJ,CJ,CK,CM, DJ,DK,DL
C3401	214073	XX70427-750		CAP POLY .01UF K 100V
CR3401	198602	XX80444-140		DIODE ZENER 5.1V .5W
IR3401	218379	XX30929-550		IC IR RECEIVER
R3401	179317	XX30939-460		RES CF 1/4W 5% 750R
R3402	175351	XX40435-660		RES CF 1/4W 5% 20K
R3403	175045	XX60441-550		RES CF 1/4W 5% 330R
SW3410	207842	1B64121-08A		SWITCH CHAN UP
SW3411	205258	1B64141-01A		SWITCH VOL DN
SW3420	207842	1B64121-08A		SWITCH CHAN DN
SW3421	207842	1B64121-08A		SWITCH VOL UP
SW3430	207842	1B64121-08A		SWITCH MENU
SW3431	207842	1B64121-08A		SWITCH ON/OFF
	139301	1479290-001		RETAINER, BEAD CHAIN

HEADPHONE CBA

	227333	2F29014-01A	CIRCUIT COMPLETE
R6301	175754	727832-123	RES CC 1/4W 5% 33R
R6302	175754	727832-123	RES CC 1/4W 5% 33R
R6303	175754	727832-123	RES CC 1/4W 5% 33R
R6304	175754	727832-123	RES CC 1/4W 5% 33R
R6309	175766	XX11059-590	RES CF 1/4W 5% 82R
J1	227334	XX15052-090	SOCKET JACK HEADPHONE
J2	227334	XX15052-090	SOCKET JACK AV/IN

IN/OUT CBA

	226785	2F29012-533	●	CIRCUIT COMPLETE CTC179BJ,CJ,DJ
	227809	2F29012-513	●	CIRCUIT COMPLETE CTC179CK,CM,DK,DL
C1145	214698	XX11054-950		CAP LYTC 10UF M 63V
C1146	214698	XX11054-950		CAP LYTC 10UF M 63V
C1400	214698	XX11054-950		CAP LYTC 10UF M 63V
C1401	214698	XX11054-950		CAP LYTC 10UF M 63V
C1404	214698	XX11054-950		CAP LYTC 10UF M 63V
C1405	214698	XX11054-950		CAP LYTC 10UF M 63V
C1406	214698	XX11054-950		CAP LYTC 10UF M 63V
C1407	214698	XX11054-950		CAP LYTC 10UF M 63V
C1408	214698	XX11054-950		CAP LYTC 10UF M 63V
C1412	220345	XX90568-600		CAP LYTC 22UF M 63V
C1428	214740	XX50882-230		CAPCC 10PF J NPO 50V
C1429	214740	XX50882-230		CAPCC 10PF J NPO 50V
C1430	200138	XX11059-360		CAPCC 470PF M X7R 50V
C1431	200138	XX11059-360		CAPCC 470PF M X7R 50V
C1432	200138	XX11059-360		CAPCC 470PF M X7R 50V
C1433	200138	XX11059-360		CAPCC 470PF M X7R 50V
C1434	200138	XX11059-360		CAPCC 470PF M X7R 50V
C1436	200138	XX11059-360		CAPCC 470PF M X7R 50V
C1437	174417	XX80433-940		CAPCC 470PF M X7R 50V
C1440	217298	XX15040-860		CAPCC .22UF Z Y5V 25V
C1441	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C1442	207857	XX30939-280		CAPCC .047UF Z Y5V 50V
C1443	205230	XX20469-340		CAPCC 4700PF K X7R 50V

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C1444	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C1445	218513	XX10038-490	CAP LYTC 1UF M 100V
C1446	218513	XX10038-490	CAP LYTC 1UF M 100V
C1464	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1465	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1470	227351	XX15064-640	CAP LYTC 470UF M 16V
C1471	227356	XX15064-630	CAP LYTC 220UF M 16V
C1472	227087	XX60439-000	CAP LYTC 3.3UF M 100V
C1473	227356	XX15064-630	CAP LYTC 220UF M 16V
C1474	190495	XX80434-400	CAP LYTC 1500UF M 25V
C1475	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C1476	195689	XX11059-340	CAPCC .01UF K X7R 50V
C1477	195689	XX11059-340	CAPCC .01UF K X7R 50V
C1478	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1479	200138	XX11059-360	CAPCC 470PF M X7R 50V
C1480	214698	XX11054-950	CAP LYTC 10UF M 63V
C1522	197607	XX11059-330	CAPCC 2200P K X7R 50V
C1523	197607	XX11059-330	CAPCC 2200P K X7R 50V
C1525	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1529	214740	XX50882-230	CAPCC 10PF J NPO 50V
C1530	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1531	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1532	193043	XX60438-950	CAP LYTC 47UF M 25V
C1533	223350	XX60438-960	CAP LYTC 100UF M 35V
C1534	161285	XX20467-280	CAP LYTC 220UF M 35V
C1535	202011	XX90568-300	CAP POLY .1UF J 63V
C1536	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1537	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1538	214740	XX50882-230	CAPCC 10PF J NPO 50V
C1541	223350	XX60438-960	CAP LYTC 100UF M 35V
C1543	161285	XX20467-280	CAP LYTC 220UF M 35V
C1544	202011	XX90568-300	CAP POLY .1UF J 63V
C1550	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1551	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1552	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1553	201131	XX11054-130	CAPCC .18UF Z Y5V 50V
C1554	197607	XX11059-330	CAPCC 2200P K X7R 50V
C1555	197607	XX11059-330	CAPCC 2200P K X7R 50V
C1556	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1557	220345	XX90568-600	CAP LYTC 22UF M 63V
C1558	214740	XX50882-230	CAPCC 10PF J NPO 50V
C1559	214740	XX50882-230	CAPCC 10PF J NPO 50V
C1560	227017	XX15003-240	CAP LYTC 10UF M 16V
C1561	227017	XX15003-240	CAP LYTC 10UF M 16V
C1562	224269	XX15048-340	CAP LYTC 4.7UF M 35V
C1563	224269	XX15048-340	CAP LYTC 4.7UF M 35V
C1701	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1702	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1703	205230	XX20469-340	CAPCC 4700PF K X7R 50V
C1704	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1705	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1706	220998	XX11067-090	CAP LYTC 1UF M 100V
C1707	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1708	207857	XX30939-280	CAPCC .047UF Z Y5V 50V
C1709	193043	XX60438-950	CAP LYTC 47UF M 25V
C1710	190552	XX70427-610	CAPCC .1UF K X7R 50V
C1711	227810	XX70427-550	CAPCC .033UF K X7R 50V
C1712	181085	XX60438-500	CAPCC 3300PF K X7R 50V
C1713	190543	XX70427-320	CAPCC 180PF J NPO 50V
C1714	190552	XX70427-610	CAPCC .1UF K X7R 50V
C1715	215555	XX40432-770	CAPCC .01UF K X7R 50V
C1716	193049	XX20466-930	CAPCC 820PF K X7R 50V
C1717	197607	XX11059-330	CAPCC 2200P K X7R 50V
C1718	179277	XX30935-390	CAPCC .047UF J X7R 50V
C1719	195691	XX30935-940	CAP LYTC 2.2UF M 100V
C1720	197607	XX11059-330	CAPCC 2200P K X7R 50V
C1721	220998	XX11067-090	CAP LYTC 1UF M 100V
C1722	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1723	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1724	205551	XX30938-730	CAPCC 220PF J NPO 50V
C1733	193043	XX60438-950	CAP LYTC 47UF M 25V
C1736	210689	XX40435-180	CAPCC 47PF J NPO 50V
C1737	210689	XX40435-180	CAPCC 47PF J NPO 50V
C1739	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1740	220345	XX90568-600	CAP LYTC 22UF M 63V
C1742	227811	XX40433-250	CAP LYTC .33UF M 100V
C1743	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1744	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1745	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1746	214698	XX11054-950	CAP LYTC 10UF M 63V
C1747	223700	XX90574-730	CAP LYTC .47UF M 100V
C1748	214698	XX11054-950	CAP LYTC 10UF M 63V
C1749	190552	XX70427-610	CAPCC .1UF K X7R 50V
C1750	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1751	190552	XX70427-610	CAPCC .1UF K X7R 50V
C1752	227811	XX40433-250	CAP LYTC .33UF M 100V
C1755	214020	XX70427-560	CAPCC .033UF Z Y5V 50V
C1756	190552	XX70427-610	CAPCC .1UF K X7R 50V
C1757	190552	XX70427-610	CAPCC .1UF K X7R 50V
C1758	195689	XX11059-340	CAPCC .01UF K X7R 50V
C1759	220345	XX90568-600	CAP LYTC 22UF M 63V
C1760	190499	XX30935-950	CAP LYTC 4.7UF M 100V
C1761	197608	XX80436-840	CAPCC 8200PF K X7R 50V
C1762	197608	XX80436-840	CAPCC 8200PF K X7R 50V
C1763	197608	XX80436-840	CAPCC 8200PF K X7R 50V
C1764	197608	XX80436-840	CAPCC 8200PF K X7R 50V
C1765	197608	XX80436-840	CAPCC 8200PF K X7R 50V
C1766	197608	XX80436-840	CAPCC 8200PF K X7R 50V
C1770	214698	XX11054-950	CAP LYTC 10UF M 63V
C1771	214698	XX11054-950	CAP LYTC 10UF M 63V
C1773	227017	XX15003-240	CAP LYTC 10UF M 16V
C1774	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1775	220345	XX90568-600	CAP LYTC 22UF M 63V
C1776	216802	XX20438-725	CAP LYTC 10UF M 16V
C1777	227017	XX15003-240	CAP LYTC 10UF M 16V
C1779	216802	XX20438-725	CAP LYTC 10UF M 16V
C1780	195689	XX11059-340	CAPCC .01UF K X7R 50V
C1781	195689	XX11059-340	CAPCC .01UF K X7R 50V
C1784	220998	XX11067-090	CAP LYTC 1UF M 100V
C1785	220998	XX11067-090	CAP LYTC 1UF M 100V
C1907	181462	XX40432-850	CAPCC .22UF Z Y5V 50V
C1908	181462	XX40432-850	CAPCC .22UF Z Y5V 50V
C1917	194366	XX80434-390	CAP LYTC 100UF M 16V
C1918	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C1923	194366	XX80434-390	CAP LYTC 100UF M 16V
C1933	222008	XX15041-170	CAPCC .1UF K X7R 25V
C1960	193043	XX60438-950	CAP LYTC 47UF M 25V
C1961	200141	XX20467-040	CAP POLY .1UF K 63V
C1962	196059	XX50880-270	CAP LYTC 2200UF M 35V
C1963	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C1964	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C1965	227350	XX15060-410	CAP LYTC 47UF M 10V
C1966	227350	XX15060-410	CAP LYTC 47UF M 10V
C1967	200141	XX20467-040	CAP POLY .1UF K 63V
C1968	200141	XX20467-040	CAP POLY .1UF K 63V
C1969	196059	XX50880-270	CAP LYTC 2200UF M 35V
C1970	196059	XX50880-270	CAP LYTC 2200UF M 35V
C1980	223692	XX70430-400	CAPCC 1000PF M X7R 50V
C1981	223692	XX70430-400	CAPCC 1000PF M X7R 50V
C2601	192049	XX40435-190	CAPCC 82PF J NPO 50V
C2602	214029	XX20468-950	CAPCC 43PF J NPO 50V
C2603	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C2604	194911	XX50882-360	CAPCC 33PF J NPO 50V
C2605	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C2606	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2607	192846	XX20467-220	CAP LYTC 68UF M 16V
C2609	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2610	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2611	156239	XX30935-880	CAP LYTC 10UF M 63V
C2612	222008	XX15041-170	CAPCC .1UF K X7R 25V
C2613	193043	XX80434-350	CAP LYTC 47UF M 25V
C2614	218986	XX11058-680	CAPCC 200PF J NPO 50V
C2615	194903	XX60441-080	CAPCC 22PF J NPO 50V
C2616	227360	XX80440-870	CAPCC 8.2PF D NPO 50V
C2617	194911	XX80436-510	CAPCC 36PF J NPO 50V
C2618	227352	XX20472-380	CAPCC 5.6PF C NPO 50V
C6203	193043	XX60438-950	CAP LYTC 47UF M 25V
C6501	220998	XX60438-930	CAP LYTC 1UF M 100V
C6502	220998	XX60438-930	CAP LYTC 1UF M 100V
C6503	220998	XX60438-930	CAP LYTC 1UF M 100V
C6504	220998	XX60438-930	CAP LYTC 1UF M 100V
C6505	202905	XX11058-650	CAPCC 39PF J NPO 50V
C6507	156239	XX30935-880	CAP LYTC 10UF M 63V
C6508	181460	XX50879-870	CAPCC 1000PF K X7R 50V
C6511	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C6512	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C6513	220998	XX60438-930	CAP LYTC 1UF M 100V
C6514	227351	XX15064-640	CAP LYTC 470UF M 16V
C6515	227356	XX15064-630	CAP LYTC 220UF M 16V
C6516	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C6517	227356	XX15064-630	CAP LYTC 220UF M 16V
C6518	195689	XX11059-340	CAPCC .01UF K X7R 50V
C6519	214740	XX50882-230	CAPCC 10PF J NPO 50V
C6520	214740	XX50882-230	CAPCC 10PF J NPO 50V

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C6521	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C6522	192049	XX40435-190	CAPCC 82PF J NPO 50V
CR1412	164717	XX70436-540	DIODE
CR1413	164717	XX70436-540	DIODE
CR1414	164717	XX70436-540	DIODE
CR1415	164717	XX70436-540	DIODE
CR1416	164717	XX70436-540	DIODE
CR1417	147015	XX11070-780	DIODE
CR1418	147015	XX11070-780	DIODE
CR1419	223659	XX15047-540	DIODE
CR1420	223659	XX15047-540	DIODE
CR1850	227362	XX90578-100	DIODE ZENER 9.1V .5W
CR1900	223659	XX15047-540	DIODE
CR1901	223659	XX15047-540	DIODE
CR1903	227355	XX50890-550	DIODE ZENER 5.1V .5W
CR1906	223659	XX15047-540	DIODE
CR1907	223659	XX15047-540	DIODE
CR1908	223659	XX15047-540	DIODE
CR1909	223659	XX15047-540	DIODE
CR1910	223659	XX15047-540	DIODE
CR6203	176296	XX30946-670	DIODE
CR6204	223694	XX80444-020	DIODE ZENER 15V .5W
CR6501	215487	XX50890-650	DIODE ZENER 6.8V .4W
CR6502	215487	XX50890-650	DIODE ZENER 6.8V .4W
CR6503	215487	XX50890-650	DIODE ZENER 6.8V .4W
CR6504	215487	XX50890-650	DIODE ZENER 6.8V .4W
CR6505	227362	XX90578-100	DIODE ZENER 9.1V .5W
DL2601	223169	XX15051-080	DELAY LINE
J1404	227348	XX15042-10A	JACK PHONO 1L AUDIO IN CTC179BJ,CJ,DJ
J1404	227816	XX15042-080	JACK PHONO 1L AUDIO IN CTC179CK,CM,DK,DL
J1405	227347	XX15042-09A	JACK PHONO 1R AUDIO IN CTC179BJ,CJ,DJ
J1405	227817	XX15042-040	JACK PHONO 1R AUDIO IN CTC179CK,CM,DK,DL
J1406	227348	XX15042-10A	JACK PHONO 2L AUDIO IN CTC179BJ,CJ,DJ
J1406	227816	XX15042-080	JACK PHONO 2L AUDIO IN CTC179CK,CM,DK,DL
J1407	227347	XX15042-09A	JACK PHONO 2R AUDIO IN CTC179BJ,CJ,DJ
J1407	227817	XX15042-040	JACK PHONO 2R AUDIO IN CTC179CK,CM,DK,DL
J1410	227348	XX15042-10A	JACK PHONO L HIFI OUT CTC179BJ,CJ,DJ
J1410	227816	XX15042-080	JACK PHONO L HIFI OUT CTC179CK,CM,DK,DL
J1414	227348	XX15042-10A	JACK PHONO L SEL OUT CTC179BJ,CJ,DJ
J1414	227816	XX15042-080	JACK PHONO L SEL OUT CTC179CK,CM,DK,DL
J1415	227347	XX15042-09A	JACK PHONO R SEL OUT CTC179BJ,CJ,DJ
J1415	227817	XX15042-040	JACK PHONO R SEL OUT CTC179CK,CM,DK,DL
J1417	227347	XX15042-09A	JACK PHONO R HIFI OUT CTC179BJ,CJ,DJ
J1417	227817	XX15042-040	JACK PHONO R HIFI OUT CTC179CK,CM,DK,DL
J1500	225707	XX60451-540 *	CONNECTOR 3 PIN HEADPH
J1501	226499	XX80456-100 *	CONNECTOR 4 PIN A/V INTERFACE
J1904	215542	XX60430-775 *	CONNECTOR 4 PIN SPKR
J6202	226525	XX11038-995	CONNECTOR 2 PIN COIL
J6501	227349	XX15051-52A	JACK PHONO VID IN 1 CTC179BJ,CJ,DJ
J6501	227818	XX15051-510	JACK PHONO VID IN 1 CTC179CK,CM,DK,DL
J6502	227349	XX15051-52A	JACK PHONO VID IN 2 CTC179BJ,CJ,DJ
J6502	227818	XX15051-510	JACK PHONO VID IN 2 CTC179CK,CM,DK,DL
J6503	214607	XX50873-374	SOCKET SVHS CTC179CK,CM,DK,DL
J6504	227349	XX15051-52A	JACK PHONO SEL VID OUT CTC179BJ,CJ,DJ
J6504	227818	XX15051-510	JACK PHONO SEL VID OUT CTC179CK,CM,DK,DL
J6506	226499	XX15051-420	CONNECTOR 4 PIN PIP
JC100	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC101	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC102	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC103	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC104	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC107	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC110	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC112	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC113	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC114	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC115	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC119	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC126	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC128	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC131	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC132	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC133	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC134	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC135	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC137	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC138	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC801	181161	XX50885-530	RES CMF 1/8W 5% .0R
L1401	160186	XX30944-680	COIL 100UH
L1402	160186	XX30944-680	COIL 100UH
L1701	160186	XX30944-680	COIL 100UH
L1702	227813	XX50886-900	COIL 120UH
L1703	160186	XX30944-680	COIL 100UH
L2601	200161	XX50886-750	COIL 33UH
L2602	161243	XX11066-630	COIL 10UH
L2603	223800	XX15048-450	COIL 18UH
L2604	161243	XX90574-480	COIL 100UH
L2605	196107	XX30944-460	COIL 56UH
L2606	196107	XX30944-460	COIL 56UH
L2607	149167	XX50886-760	COIL 68UH
L2608	161243	XX11066-630	COIL 10UH
L2609	160186	XX30944-680	COIL 100UH
L6501	160186	XX30944-680	COIL 100UH
L6502	160186	XX30944-680	COIL 100UH
Q1410	215495	XX11070-770	TRANSISTOR PREMUTE INV
Q1411	215496	XX30946-660	TRANSISTOR 12V DELAY SW
Q1412	215496	XX30946-660	TRANSISTOR +12V DELAY
Q1413	215495	XX11070-770	TRANSISTOR -12V DELAY
Q1414	215495	XX11070-770	TRANSISTOR SEL L CLAMP
Q1415	215495	XX11070-770	TRANSISTOR HIFI L CLAMP
Q1416	215495	XX11070-770	TRANSISTOR SEL R CLAMP
Q1417	215495	XX11070-770	TRANSISTOR CLAMP DRIVE
Q1418	215495	XX11070-770	TRANSISTOR CLAMP DRIVE
Q1419	215496	XX30946-660	TRANSISTOR CLAMP DRIVE
Q1500	177788	XX70436-520	TRANSISTOR HDPHN PASS
Q1703	227814	XX15043-340	TRANSISTOR HIPASS FILT
Q1704	227814	XX15043-340	TRANSISTOR HIPASS FILT
Q1705	227814	XX15043-340	TRANSISTOR 200HZ LOPASS
Q1706	227814	XX15043-340	TRANSISTOR 7KHZ HI PASS
Q1907	215495	XX11070-770	TRANSISTOR 5W PA MUT SW
Q1910	215495	XX11070-770	TRANSISTOR DC DET DRIVE
Q1911	215495	XX11070-770	TRANSISTOR DC DET DRIVE
Q1912	215495	XX11070-770	TRANSISTOR PA MUTE GATE
Q2601	215495	XX11070-770	TRANSISTOR LUMA PH EQ
Q2602	215496	XX30946-660	TRANSISTOR Z-AXIS DEG
Q2603	215495	XX11070-770	TRANSISTOR 3.58 TRAP SW
Q2604	215496	XX30946-660	TRANSISTOR LUMA EQ BUFF
Q2605	215496	XX30946-660	TRANSISTOR LUMA BUFFER
Q6202	223704	XX50888-770	TRANSISTOR VID OUT BUF
Q6502	215496	XX30946-660	TRANSISTOR VIDEO BUFF
Q6503	215496	XX30946-660	TRANSISTOR VIDEO BUFF
Q6504	215495	XX11070-770	TRANSISTOR VIDEO BUFF
R1130	175325	XX50882-950	RES CF 1/4W 5% 100R
R1131	175325	XX50882-950	RES CF 1/4W 5% 100R
R1136	175413	XX40435-640	RES CF 1/4W 5% 4.7K
R1400	175042	XX20469-460	RES CF 1/4W 5% 2.2K
R1401	192093	XX70434-290	RES CMF 1/10W 5% 220K
R1402	176366	XX90573-580	RES CMF 1/8W 5% 2.2K
R1403	829222	XX40434-770 *	RES MFFP 1/4W 2% 2.2K
R1404	192093	XX70434-290	RES CMF 1/10W 5% 220K
R1405	829222	XX40434-770 *	RES MFFP 1/4W 2% 2.2K
R1406	829222	XX40434-770	RES MFFP 1/4W 2% 2.2K
R1407	175742	XX30943-060	RES CMF 1/8W 5% 220R

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
R1408	829222	XX40434-770	*	RES MFFP 1/4W 2% 2.2K
R1409	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1410	829222	XX40434-770	*	RES MFFP 1/4W 2% 2.2K
R1411	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1412	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1413	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1414	175325	XX50882-950		RES CF 1/4W 5% 100R
R1415	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1416	175325	XX50882-950		RES CF 1/4W 5% 100R
R1420	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1421	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1422	829110	XX30943-330	*	RES CF 1/4W 5% 100R
R1423	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1429	108865	XX30937-900	*	RES CC 1/4W 5% 1K
R1431	108865	XX30937-900	*	RES CC 1/4W 5% 1K
R1432	175325	XX50882-950		RES CF 1/4W 5% 100R
R1440	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1441	829110	XX30943-330	*	RES CF 1/4W 5% 100R
R1442	197470	XX30944-330		RES CMF 1/10W 5% 20K
R1443	175055	XX11059-640		RES CF 1/4W 5% 1K
R1444	174364	XX60443-710		RES CMF 1/8W 5% 10K
R1445	197470	XX30944-330		RES CMF 1/10W 5% 20K
R1446	175055	XX11059-640		RES CF 1/4W 5% 1K
R1447	175325	XX50882-950		RES CF 1/4W 5% 100R
R1448	175055	XX11059-640		RES CF 1/4W 5% 1K
R1451	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1452	176366	XX90573-580		RES CMF 1/8W 5% 2.2K
R1453	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1454	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1455	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1456	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1457	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1459	175413	XX40435-640		RES CF 1/4W 5% 4.7K
R1460	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1461	175742	XX30943-060		RES CMF 1/8W 5% 220R
R1462	176816	XX60443-740		RES CMF 1/8W 5% 100K
R1463	192072	XX70434-300		RES CMF 1/10W 5% 330K
R1464	205360	XX80440-420		RES CMF 1/10W 5% 33K
R1465	192084	XX50886-630		RES CMF 1/10W 5% 100K
R1466	175352	XX50883-000		RES CFFP 1/4W 5% 3.3K
R1467	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1468	175352	XX50883-000		RES CFFP 1/4W 5% 3.3K
R1469	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1470	192070	XX60444-400		RES CMF 1/10W 5% 22K
R1471	192070	XX60444-400		RES CMF 1/10W 5% 22K
R1472	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1473	192070	XX60444-400		RES CMF 1/10W 5% 22K
R1474	192070	XX60444-400		RES CMF 1/10W 5% 22K
R1475	174367	XX20471-390		RES CMF 1/8W 5% 22K
R1476	174348	XX30942-990		RES CMF 1/8W 5% 1K
R1477	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1478	174348	XX30942-990		RES CMF 1/8W 5% 1K
R1479	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1480	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1481	175325	XX50882-950		RES CF 1/4W 5% 100R
R1483	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1484	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1485	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1486	205354	XX70434-250		RES CMF 1/10W 5% 15K
R1487	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1488	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1489	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1490	205354	XX70434-250		RES CMF 1/10W 5% 15K
R1493	108865	XX30937-900	*	RES CC 1/4W 5% 1K
R1494	108865	XX30937-900	*	RES CC 1/4W 5% 1K
R1495	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1496	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1497	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1498	192097	XX30944-310		RES CMF 1/10W 5% 4.7K
R1499	192096	XX80440-390		RES CMF 1/10W 5% 2.2K
R1512	197903	XX20471-960		RES CMF 1/10W 5% 1.8K
R1513	194923	XX90574-380		RES CMF 1/10W 5% 200R
R1514	194920	XX70434-230		RES CMF 1/10W 5% 1.2K
R1515	194920	XX70434-230		RES CMF 1/10W 5% 1.2K
R1521	205411	XX11066-620		RES CMF 1/10W 10% 4.7R
R1522	227340	XX70429-570		RES CC 1/4W 5% 16R
R1523	197903	XX20471-960		RES CMF 1/10W 5% 1.8K
R1528	194923	XX90574-380		RES CMF 1/10W 5% 200R
R1531	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1532	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1533	175325	XX50882-950		RES CF 1/4W 5% 100R
R1534	175325	XX50882-950		RES CF 1/4W 5% 100R
R1535	195942	XX90574-400		RES CMF 1/10W 5% 470R
R1536	195942	XX90574-400		RES CMF 1/10W 5% 470R
R1538	197907	XX60444-390		RES CMF 1/10W 5% 3.9K
R1539	205411	XX11066-620		RES CMF 1/10W 10% 4.7R
R1540	227340	XX70429-570		RES CC 1/4W 5% 16R
R1541	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1542	205354	XX70434-250		RES CMF 1/10W 5% 15K
R1543	197907	XX60444-390		RES CMF 1/10W 5% 3.9K
R1550	175055	XX11059-640		RES CF 1/4W 5% 1K
R1551	175055	XX11059-640		RES CF 1/4W 5% 1K
R1552	197907	XX60444-390		RES CMF 1/10W 5% 3.9K
R1553	197907	XX60444-390		RES CMF 1/10W 5% 3.9K
R1554	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1555	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1556	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1557	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1558	829110	XX30943-330	*	RES CF 1/4W 5% 100R
R1559	174364	XX60443-710		RES CMF 1/8W 5% 10K
R1701	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1705	197643	XX30944-320		RES CMF 1/10W 5% 9.1K
R1706	205372	XX80440-440		RES CMF 1/10W 5% 160K
R1708	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1709	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1710	205354	XX70434-250		RES CMF 1/10W 5% 15K
R1711	205354	XX70434-250		RES CMF 1/10W 5% 15K
R1712	197627	XX90574-410		RES CMF 1/10W 5% 910R
R1713	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1714	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1715	192084	XX50886-630		RES CMF 1/10W 5% 100K
R1716	193343	XX90574-440		RES CMF 1/10W 5% 56K
R1717	197621	XX90574-430		RES CMF 1/10W 5% 18K
R1718	192072	XX70434-300		RES CMF 1/10W 5% 330K
R1719	174348	XX30942-990		RES CMF 1/8W 5% 1K
R1720	174348	XX30942-990		RES CMF 1/8W 5% 1K
R1721	175419	XX80437-040		RES CF 1/4W 5% 82K
R1722	197634	XX11066-470		RES CMF 1/10W 5% 24K
R1724	207839	XX80440-430		RES CMF 1/10W 5% 43K
R1726	197621	XX90574-430		RES CMF 1/10W 5% 18K
R1728	207839	XX80440-430		RES CMF 1/10W 5% 43K
R1729	175419	XX80437-040		RES CF 1/4W 5% 82K
R1730	197634	XX11066-470		RES CMF 1/10W 5% 24K
R1732	174368	XX80439-690		RES CMF 1/8W 5% 30K
R1733	175046	XX11059-700		RES CF 1/4W 5% 30K
R1734	175308	XX80437-000		RES CF 1/4W 5% 1.2K
R1735	194920	XX70434-230		RES CMF 1/10W 5% 1.2K
R1736	195937	XX50886-610		RES CMF 1/10W 5% 10K
R1738	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1739	192084	XX50886-630		RES CMF 1/10W 5% 100K
R1740	205394	XX11066-570		RES CMF 1/10W 5% 2.4M
R1741	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1742	192093	XX70434-290		RES CMF 1/10W 5% 220K
R1743	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1744	162006	XX40437-530		RES CMF 1/8W 5% 3.9K
R1745	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1746	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1747	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1748	192079	XX80440-470		RES CMF 1/10W 5% 2.2M
R1749	192097	XX30944-310		RES CMF 1/10W 5% 4.7K
R1755	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1757	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1758	205397	XX80440-480		RES CMF 1/10W 5% 3.3M
R1759	205397	XX80440-480		RES CMF 1/10W 5% 3.3M
R1760	204278	XX70434-340		RES CMF 1/10W 10% 4.7M
R1761	192079	XX80440-470		RES CMF 1/10W 5% 2.2M
R1762	174348	XX30942-990		RES CMF 1/8W 5% 1K
R1763	176818	XX30942-940		RES CMF 1/8W 5% 100R
R1764	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1767	218508	XX70434-200		RES CMF 1/10W 5% 100R
R1768	193343	XX90574-440		RES CMF 1/10W 5% 56K
R1769	192072	XX70434-300		RES CMF 1/10W 5% 330K
R1770	206729	XX20471-970		RES CMF 1/10W 5% 2.4K
R1771	181061	XX40437-560		RES CMF 1/8W 5% 24K
R1772	197634	XX11066-470		RES CMF 1/10W 5% 24K
R1773	192100	XX20471-950		RES CMF 1/10W 5% 1K
R1774	829110	XX30943-330		RES CF 1/4W 5% 100R
R1775	192070	XX60444-400		RES CMF 1/10W 5% 22K
R1776	192070	XX60444-400		RES CMF 1/10W 5% 22K
R1777	197634	XX11066-470		RES CMF 1/10W 5% 24K
R1778	181071	XX20471-350		RES CMF 1/8W 5% 2.4K
R1779	174348	XX30942-990		RES CMF 1/8W 5% 1K
R1780	829110	XX30943-330		RES CF 1/4W 5% 100R
R1781	205360	XX80440-420		RES CMF 1/10W 5% 33K

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R1782	176813	XX11064-810	RES CMF 1/8W 5% 33K
R1783	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1784	205360	XX80440-420	RES CMF 1/10W 5% 33K
R1785	176813	XX11064-810	RES CMF 1/8W 5% 33K
R1786	174348	XX30942-990	RES CMF 1/8W 5% 1K
R1787	181494	XX11064-830	RES CMF 1/8W 5% 82K
R1788	205244	XX70434-270	RES CMF 1/10W 5% 82K
R1789	181494	XX11064-830	RES CMF 1/8W 5% 82K
R1790	205244	XX70434-270	RES CMF 1/10W 5% 82K
R1791	197634	XX11066-470	RES CMF 1/10W 5% 24K
R1792	829110	XX30943-330	RES CF 1/4W 5% 100R
R1875	195937	XX50886-610	RES CMF 1/10W 5% 10K
R1902	195937	XX50886-610	RES CMF 1/10W 5% 10K
R1904	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1909	205354	XX70434-250	RES CMF 1/10W 5% 15K
R1910	195937	XX50886-610	RES CMF 1/10W 5% 10K
R1911	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R1912	195937	XX90574-280	RES CMF 1/10W 2% 10K
R1913	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1914	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1915	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1916	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1942	197473	XX20471-930	RES CMF 1/10W 5% 510R
R1947	227358	XX70432-210 *	RES WW 3W 5% 33R
R1948	178282	XX11059-610	RES CF 1/4W 5% 270R
R1949	178282	XX11059-610	RES CF 1/4W 5% 270R
R1950	175317	XX30939-480	RES CF 1/4W 5% 10K
R1951	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1952	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1953	192083	XX30944-280	RES CMF 1/10W 5% 120R
R1954	205349	XX11066-460	RES CMF 1/10W 5% 8.2K
R1955	200197	XX80439-850 *	RES CF 1/4W 5% 4.7R
R1956	829110	XX30943-330	RES CF 1/4W 5% 100R
R1957	181065	XX11064-780	RES CMF 1/8W 5% 8.2K
R1958	200197	XX80439-850 *	RES CF 1/4W 5% 4.7R
R1959	192083	XX30944-280	RES CMF 1/10W 5% 120R
R1979	205354	XX70434-250	RES CMF 1/10W 5% 15K
R1980	192100	XX20471-950	RES CMF 1/10W 5% 1K
R1981	193343	XX90574-440	RES CMF 1/10W 5% 56K
R1982	218508	XX70434-200	RES CMF 1/10W 5% 100R
R1983	175042	XX20469-460	RES CF 1/4W 5% 2.2K
R1984	201144	XX50886-670	RES CMF 1/10W 5% 1M
R1986	195929	XX50886-540	RES CMF 1/10W 5% 330R
R1987	195929	XX50886-540	RES CMF 1/10W 5% 330R
R1992	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R1993	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R1994	192070	XX60444-400	RES CMF 1/10W 5% 22K
R1995	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R1996	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R2601	175311	XX50883-100	RES CF 1/4W 2% 1.6K
R2602	205341	XX60444-270	RES CMF 1/10W 2% 2K
R2603	192088	XX70434-080	RES CMF 1/10W 2% 820R
R2604	205336	XX11066-410	RES CMF 1/10W 5% 300R
R2605	192086	XX80440-370	RES CMF 1/10W 5% 150R
R2606	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2607	205308	XX30944-250	RES CMF 1/10W 5% 10R
R2608	181106	XX70434-550	RES CONTROL COMB NULL
R2609	215200	XX50886-560	RES CMF 1/10W 5% 750R
R2610	227361	XX90576-940	RES CMF 1/10W 1% 732R
R2611	197627	XX90574-250	RES CMF 1/10W 2% 910R
R2612	175414	XX50881-790	RES CC 1/4W 5% 51R
R2613	197634	XX11066-470	RES CMF 1/10W 5% 24K
R2614	195937	XX50886-610	RES CMF 1/10W 5% 10K
R2615	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2616	192077	XX11066-440	RES CMF 1/10W 5% 3.3K
R2617	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R2618	192100	XX20471-950	RES CMF 1/10W 5% 1K
R2619	218508	XX70434-200	RES CMF 1/10W 5% 100R
R2620	176645	XX50882-960	RES CF 1/4W 5% 150R
R2622	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R2623	192091	XX50886-580	RES CMF 1/10W 5% 2K
R2624	197637	XX20471-940	RES CMF 1/10W 5% 680R
R2626	192093	XX70434-290	RES CMF 1/10W 5% 220K
R2627	176367	XX80439-630	RES CMF 1/8W 5% 47R
R2628	205308	XX30944-250	RES CMF 1/10W 5% 10R
R2629	197645	XX50886-600	RES CMF 1/10W 5% 5.1K
R2630	197637	XX20471-940	RES CMF 1/10W 5% 680R
R2631	179316	XX11059-940	RES CF 1/4W 2% 6.2K
R2632	175413	XX11059-930	RES CF 1/4W 2% 4.7K
R6204	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R6205	195937	XX50886-610	RES CMF 1/10W 5% 10K
R6206	830122	XX11066-000 *	RES CFFP 1/2W 2% 220R

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R6207	175413	XX40435-640	RES CF 1/4W 5% 4.7K
R6208	830182	XX40437-990	RES CFFP 1/2W 2% 820R
R6209	830047	XX80440-220 *	RES CFFP 1/2W 2% 47R
R6501	197619	XX11066-390	RES CMF 1/10W 5% 75R
R6502	175414	XX50881-790 *	RES CC 1/4W 5% 51R
R6503	175414	XX50881-790	RES CC 1/4W 5% 51R
R6504	197619	XX11066-390	RES CMF 1/10W 5% 75R
R6505	175414	XX50881-790 *	RES CC 1/4W 5% 51R
R6506	175414	XX50881-790	RES CC 1/4W 5% 51R
R6507	197622	XX40438-320	RES CMF 1/10W 5% 51K
R6508	175414	XX50881-790 *	RES CC 1/4W 5% 51R
R6509	175414	XX50881-790	RES CC 1/4W 5% 51R
R6510	175414	XX50881-790	RES CC 1/4W 5% 51R
R6511	195935	XX90574-370	RES CMF 1/10W 5% 82R
R6513	195935	XX90574-370	RES CMF 1/10W 5% 82R
R6515	175414	XX50881-790	RES CC 1/4W 5% 51R
R6516	227359	XX80435-960	RES CC 1/4W 5% 330R
R6516	227359	XX80435-960	RES CC 1/4W 5% 330R
R6521	175325	XX50882-950	RES CF 1/4W 5% 100R
R6522	175412	XX50882-970	RES CF 1/4W 5% 470R
R6523	195937	XX50886-610	RES CMF 1/10W 5% 10K
R6524	181493	XX50885-620	RES CMF 1/8W 5% 620R
R6525	179814	XX30939-470	RES CF 1/4W 5% 1.1K
R6526	829068	XX50881-800 *	RES CC 1/4W 5% 68R
R6527	175756	XX80435-950	RES CC 1/4W 5% 75R
R6528	197628	XX40438-170	RES CMF 1/10W 2% 1.5K
R6529	205339	XX11066-260	RES CMF 1/10W 2% 620R
R6531	197473	XX20471-930	RES CMF 1/10W 5% 510R
R6532	195937	XX50886-610	RES CMF 1/10W 5% 10K
R6533	195937	XX50886-610	RES CMF 1/10W 5% 10K
R6535	181072	XX70433-170	RES CMD 1/8W 5% 4.3K
R6536	205349	XX11066-460	RES CMF 1/10W 5% 8.2K
R6537	829082	XX11065-200	RES CF 1/4W 5% 82R
R6538	192100	XX20471-950	RES CMF 1/10W 5% 1K
R6539	192100	XX20471-950	RES CMF 1/10W 5% 1K
R6540	192084	XX50886-630	RES CMF 1/10W 5% 100K
R6541	192084	XX50886-630	RES CMF 1/10W 5% 100K
R6543	175325	XX50882-950	RES CF 1/4W 5% 100R
R6544	175325	XX50882-950	RES CF 1/4W 5% 100R
R6545	197645	XX50886-600	RES CMF 1/10W 5% 5.1K
R6546	175414	XX50881-790	RES CC 1/4W 5% 51R
R6548	192081	XX50886-590	RES CMF 1/10W 5% 2.7K
SC1900	227346	XX15042-030 *	CONNECTOR SURR SPKR
SC1904	227346	XX15042-030 *	CONNECTOR EXT SPKR
SW1900	227353	XX30909-946	SWITCH INT/EXT SPKRS
SW6201	205225	XX40323-600	SWITCH PIX TILT-STRNGTH
SW6202	211982	XX10848-900	SWITCH PIX TILT-POLARTY
U1402	227345	XX15041-020	IC AUDIO MATRIX SW
U1403	223806	XX46022-000	IC EXPAND STEREO AMP
U1404	223806	XX46022-000	IC SEL JACK DRIVER
U1405	223806	XX46022-000	IC HIFI JACK DRIVER
U1406	227357	XX70400-537	IC PREAMP COMPARATOR
U1503	227344	XX15000-750	IC TONE/VOL/BALANCE
U1504	227344	XX15000-750	IC HEADPHONE T/V/B
U1505	227342	XX15047-430	IC HEADPHONE AMP
U1700	207827	XX60431-185	IC SRS MIXER AMP
U1702	227815	XX15043-280	IC SRS PROCESSER
U1710	223806	XX46022-000	IC STEREO MIXING AMP
U1910	227341	XX15047-060	IC AVR COMPARATOR
U1913	210911	XX15052-560	IC 5W STEREO AMP
U2601	182321	XX15043-270	IC ANALOG COMB FILTER
U2602	227354	XX50814-300	IC SVHS CHROMA SWITCH
U2603	227354	XX50814-300	IC SVHS LUMA SWITCH
U6501	227343	XX15000-720	IC COMP VIDEO SWITCH
	227371	XX15049-080	GROMMET, SCREW ENCL
	227369	XX15043-17A	HEATSINK, 5W AUDIO
	139301	1479290-001	RETAINER, BEAD CHAIN
	227370	XX15048-990	TERMINAL, GND-HEATSINK
	154397	2870460-001	WIRE SADDLE .66 HIGH
	215867	2870929-004	WIRE SADDLE, TWIST END
	154385	2870929-001	WIRE TIE, TWIST END

CRT DRIVER CBA

	228934	2F30017-503 ●	CIRCUIT COMPLETE CTC179BJ

CTC179
REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
	226786	2F30017-511 ●	CIRCUIT COMPLETE CTC179CJ,DK
	228908	2F30017-523 ●	CIRCUIT COMPLETE CTC179CK,CM
	227820	2F30017-521 ●	CIRCUIT COMPLETE CTC179DJ,DL
C5001	214068	XX43096-900	CAP POLY .47UF M 400V
C5002	195749	XX11057-080	CAPCD .012UF M Z5U 250V
C5003	226300	XX80435-780	CAPCD 3300PF K Z5P 3KV
C5004	220998	XX11067-090	CAP LYTC 1UF M 100V
C5005	220998	XX11067-090	CAP LYTC 1UF M 100V
C5006	220998	XX11067-090	CAP LYTC 1UF M 100V
C5007	190500	XX70428-070	CAP LYTC 180UF M 16V
C5008	200153	XX40432-900	CAP POLY .047UF J 63V CTC179BJ,CJ,CK, CM,DK
C5008	205237	XX40432-910	CAP POLY .056UF J 63V CTC179DJ,DL
C5009	223350	XX60438-960	CAP LYTC 100UF M 35V
C5010	190500	XX70428-070	CAP LYTC 180UF M 16V
C5011	145676	XX11055-300	CAPCD 68PF J NPO 50V
C5012	145676	XX11055-300	CAPCD 68PF J NPO 50V
C5013	145676	XX11055-300	CAPCD 68PF J NPO 50V
C5014	197609	XX50882-800	CAPCC 1500PF K X7R 50V
C5015	214032	XX30938-720	CAPCC 150PF J NPO 50V
C5016	181099	XX40432-880	CAP POLY .33UF K 63V
C5017	214032	XX30938-720	CAPCC 150PF J NPO 50V
C5018	197609	XX50882-800	CAPCC 1500PF K X7R 50V
C5019	214032	XX30938-720	CAPCC 150PF J NPO 50V
C5021	214741	XX80436-520	CAPCC 56PF J NPO 50V
C5022	214741	XX80436-520	CAPCC 56PF J NPO 50V
C5023	214741	XX80436-520	CAPCC 56PF J NPO 50V
C5024	222008	XX15041-170	CAPCC .1UF K X7R 25V
C5202	200140	XX11059-420	CAPCC .01UF Z Z5U 50V
C5203	221142	XX11067-100	CAP LYTC 33UF M 50V
C5204	195922	XX20469-230	CAPCC 330PF K NPO 50V
C5205	220204	XX11054-500	CAP POLY .01UF K 250V
C5206	195922	XX20469-230	CAPCC 330PF K NPO 50V
C5207	195689	XX11059-340	CAPCC .01UF K X7R 50V
C5208	227407	XX15069-570	CAPCD 100PF J NPO 500V
C5209	214743	XX11081-360	CAP LYTC 10UF M 200V
C5210	227390	XX11054-970	CAP LYTC 22UF M 100V
C5211	227390	XX11054-970	CAP LYTC 22UF M 100V
C5212	227390	XX11054-970	CAP LYTC 22UF M 100V
C6201	190523	XX30935-550	CAP POLY .22UF M 100V
CR5001	140971	XX70436-530	DIODE
CR5002	140971	XX70436-530	DIODE
CR5003	164717	XX70436-540	DIODE
CR5004	139706	XX80442-720	DIODE
CR5005	139706	XX80442-720	DIODE
CR5006	139706	XX80442-720	DIODE
CR5007	215487	XX50890-650	DIODE ZENER 6.8V .4W CTC179BJ,CK,CM,DJ,DL
CR5007	215488	XX11073-650	DIODE ZENER 5.6V .4W CTC179CJ,DK
CR5008	215487	XX50890-650	DIODE ZENER 6.8V .4W CTC179BJ,CK,CM,DJ,DL
CR5008	215488	XX11073-650	DIODE ZENER 5.6V .4W CTC179CJ,DK
CR5009	215487	XX50890-650	DIODE ZENER 6.8V .4W CTC179BJ,CK,CM,DJ,DL
CR5009	215488	XX11073-650	DIODE ZENER 5.6V .4W CTC179CJ,DK
CR6201	176296	XX30946-670	DIODE
FB5201	226467	XX50895-750	BEAD
FB5202	226467	XX50895-750	BEAD
FB5203	227410	XX60452-600	BEAD
J5002	227401	XX15049-700 *	CONNECTOR 5 PIN CRT GND
J5003	227394	XX11095-570	CONNECTOR 2 PIN RGB VID
J5101	227397	XX15049-680	CONNECTOR 4 PIN +12V
J5201	226977	XX60458-390 *	CONNECTOR 3 PIN SVM OUT
J5202	227400	XX15049-690 *	CONNECTOR 4 PIN SVM PWR
J5203	226978	XX70449-810	CONNECTOR 3 PIN SVM IN
JC501	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC503	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC507	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC511	181161	XX50885-530	RES CMF 1/8W 5% .0R

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
KS5001	207936	XX30928-503 *	SOCKET PIX TUBE CTC179CJ,DJ,DK,DL
KS5001	228946	XX15081-270 *	SOCKET PIX TUBE CTC179BJ,CK,CM
L5001	195712	XX20472-080	COIL 22UH
L5002	195712	XX20472-080	COIL 22UH
L5003	195712	XX20472-080	COIL 22UH
L5004	175409	XX80440-610 *	COIL 10UH
L5005	175409	XX80440-610 *	COIL 10UH
L5006	195712	XX20472-080 *	COIL 22UH
L5007	195712	XX20472-080 *	COIL 22UH
L5008	195712	XX20472-080 *	COIL 22UH
Q5001	208434	XX60411-533	TRANSISTOR CRT DRV OUT
Q5002	208434	XX60411-533	TRANSISTOR CRT DRV OUT
Q5003	208434	XX60411-533	TRANSISTOR CRT DRV OUT
Q5004	226453	XX15053-290	TRANSISTOR CRT DRV OUT
Q5005	227406	XX15053-300	TRANSISTOR CRT DRV OUT
Q5006	226453	XX15053-290	TRANSISTOR CRT DRV OUT
Q5007	227406	XX15053-300	TRANSISTOR CRT DRV OUT
Q5008	226453	XX15053-290	TRANSISTOR CRT DRV OUT
Q5009	227406	XX15053-300	TRANSISTOR CRT DRV OUT
Q5013	215496	XX30946-660	TRANSISTOR CRT DRV REF
Q5014	215496	XX30946-660	TRANSISTOR CRT DRV REF
Q5015	215496	XX30946-660	TRANSISTOR CRT DRV REF
Q5016	215495	XX11070-770	TRANSISTOR CRT DRV REF
Q5018	215495	XX11070-770	TRANSISTOR CRT DRV DEV
Q5021	215495	XX11070-770	TRANSISTOR CRT DRV DEV
Q5024	215495	XX11070-770	TRANSISTOR CRT DRV DEV
Q5028	214644	XX90618-810	TRANSISTOR AKB SENSE CTC179BJ,CK,CM,DJ,DL
Q5028	215495	XX11070-770	TRANSISTOR AKB SENSE CTC179CJ,DK
Q5029	214644	XX90618-810	TRANSISTOR AKB SENSE CTC179BJ,CK,CM,DJ,DL
Q5029	215495	XX11070-770	TRANSISTOR AKB SENSE CTC179CJ,DK
Q5030	214644	XX90618-810	TRANSISTOR AKB SENSE CTC179BJ,CK,CM,DJ,DL
Q5030	215495	XX11070-770	TRANSISTOR AKB SENSE CTC179CJ,DK
Q5201	215495	XX11070-770	TRANSISTOR SVM AMP
Q5202	215495	XX11070-770	TRANSISTOR SVM BUFFER
Q5204	177788	XX70436-520	TRANSISTOR SVM BUFFER
Q5205	177789	XX90576-540	TRANSISTOR SVM BUFFER
Q5206	227405	XX15052-880	TRANSISTOR SVM DRIVER
Q5207	227404	XX15052-870	TRANSISTOR SVM DRIVER
R5001	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R5002	192096	XX80440-390	RES CMF 1/10W 5% 2.2K
R5003	175055	XX11059-640	RES CF 1/4W 5% 1K
R5004	502210	XX11057-930 *	RES CC 1/2W 10% 1K
R5005	502210	XX11057-930 *	RES CC 1/2W 10% 1K
R5006	502210	XX11057-930 *	RES CC 1/2W 10% 1K
R5007	227393	XX11062-100 *	RES MF 3W 5% 12K
R5008	227393	XX11062-100 *	RES MF 3W 5% 12K
R5009	227393	XX11062-100 *	RES MF 3W 5% 12K
R5010	175044	XX30939-510	RES CF 1/4W 5% 100K
R5011	176650	XX11059-730	RES CF 1/4W 5% 120K
R5012	176650	XX11059-730	RES CF 1/4W 5% 120K
R5013	181487	XX11064-670	RES CMF 1/8W 5% 51R CTC179BJ,CK,CM,DJ,DL
R5013	175741	XX11064-640	RES CMF 1/8W 5% 10R CTC179CJ,DK
R5014	175325	XX50882-950	RES CF 1/4W 5% 100R CTC179BJ,CJ,CK, CM,DJ,DK
R5014	175414	XX90571-080	RES CF 1/4W 5% 51R CTC179DJ,DL
R5015	181487	XX11064-670	RES CMF 1/8W 5% 51R CTC179BJ,CK,CM,DJ,DL
R5015	175741	XX11064-640	RES CMF 1/8W 5% 10R CTC179CJ,DK
R5016	176818	XX30942-940	RES CMF 1/8W 5% 100R CTC179BJ,CJ,CK,CM,DK
R5016	181487	XX11064-670	RES CMF 1/8W 5% 51R CTC179DJ,DL
R5017	192075	XX90574-360	RES CMF 1/10W 5% 51R CTC179BJ,CK,CM,DJ,DL
R5017	205308	XX30944-250	RES CMF 1/10W 5% 10R CTC179CJ,DK

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
R5018	176818	XX30942-940		RES CMF 1/8W 5% 100R CTC179BJ,CJ,CK,CM,DK
R5018	181487	XX11064-670		RES CMF 1/8W 5% 51R CTC179DJ,DL
R5019	175055	XX11059-640		RES CF 1/4W 5% 1K
R5020	197470	XX30944-330		RES CMF 1/10W 5% 20K
R5021	197470	XX30944-330		RES CMF 1/10W 5% 20K
R5022	181060	XX60443-720		RES CMF 1/8W 5% 16K CTC179BJ,CJ,CK,CM,DK
R5022	181061	XX11065-020		RES CMF 1/8W 2% 24K CTC179DJ,DL
R5023	190456	XX11064-850		RES CMF 1/8W 5% 200K
R5024	175042	XX20469-460		RES CF 1/4W 5% 2.2K
R5025	829110	XX30943-330	*	RES CFFP 1/4W 5% 100R
R5026	829018	XX50885-830		RES CFFP 1/4W 5% 18R
R5027	829110	XX30943-330	*	RES CFFP 1/4W 5% 100R
R5029	829110	XX30943-330	*	RES CFFP 1/4W 5% 100R
R5031	829210	XX70433-410		RES CFFP 1/4W 5% 1K
R5032	829210	XX70433-410		RES CFFP 1/4W 5% 1K
R5033	829210	XX70433-410		RES CFFP 1/4W 5% 1K
R5034	176673	XX11061-580	*	RES MF 1W 5% 100R
R5035	191138	XX30938-180		RES CC 1/2W 10% 180K
R5036	227411	XX80436-150		RES CC 1/2W 10% 15K
R5037	502222	XX11057-940	*	RES CC 1/2W 10% 2.2K
R5038	829110	XX30943-330		RES CF 1/4W 5% 100R CTC179BJ,CK,CM
R5038	829010	XX20471-500	*	RES CF 1/4W 5% 10R CTC179CJ,DK
R5038	829047	XX40437-690	*	RES CF 1/4W 5% 47R CTC179DJ,DL
R5039	829110	XX30943-330		RES CF 1/4W 5% 100R CTC179BJ,CK,CM
R5039	829010	XX20471-500	*	RES CF 1/4W 5% 10R CTC179CJ,DK
R5039	829047	XX40437-690	*	RES CF 1/4W 5% 47R CTC179DJ,DL
R5040	829110	XX30943-330		RES CF 1/4W 5% 100R CTC179BJ,CK,CM
R5040	829010	XX20471-500	*	RES CF 1/4W 5% 10R CTC179CJ,DK
R5040	829047	XX40437-690	*	RES CF 1/4W 5% 47R CTC179DJ,DL
R5041	175307	XX80436-970		RES CF 1/4W 5% 510R
R5042	175307	XX80436-970		RES CF 1/4W 5% 510R
R5043	175307	XX80436-970		RES CF 1/4W 5% 510R
R5044	829047	XX40437-690	*	RES CFFP 1/4W 5% 47R
R5045	829047	XX40437-690	*	RES CFFP 1/4W 5% 47R
R5046	829047	XX40437-690	*	RES CFFP 1/4W 5% 47R
R5047	205314	XX70434-180		RES CMF 1/10W 5% 18R
R5048	205350	XX11066-290		RES CMF 1/10W 2% 9.1K
R5049	197627	XX90574-250		RES CMF 1/10W 2% 910R
R5050	195929	XX50886-540		RES CMF 1/10W 5% 330R
R5051	218508	XX70434-200		RES CMF 1/10W 5% 100R
R5052	201140	XX11066-400		RES CMF 1/10W 5% 240R
R5053	205308	XX30944-250		RES CMF 1/10W 5% 10R
R5054	197624	XX90574-230		RES CMF 1/10W 2% 240R
R5055	197624	XX90574-230		RES CMF 1/10W 2% 240R
R5056	218508	XX70434-200		RES CMF 1/10W 5% 100R
R5058	197624	XX90574-230		RES CMF 1/10W 2% 240R
R5060	195929	XX50886-540		RES CMF 1/10W 5% 330R
R5063	205308	XX30944-250		RES CMF 1/10W 5% 10R
R5068	218508	XX70434-200		RES CMF 1/10W 5% 100R
R5069	218508	XX70434-200		RES CMF 1/10W 5% 100R
R5070	195929	XX50886-540		RES CMF 1/10W 5% 330R
R5072	218508	XX70434-200		RES CMF 1/10W 5% 100R
R5073	205308	XX30944-250		RES CMF 1/10W 5% 10R
R5074	829147	XX11065-230	*	RES CF 1/4W 5% 470R
R5075	829147	XX11065-230	*	RES CF 1/4W 5% 470R
R5076	829147	XX11065-230	*	RES CF 1/4W 5% 470R
R5079	829010	XX20471-500		RES CFFP 1/4W 5% 10R
R5083	205346	XX80440-400		RES CMF 1/10W 5% 5.6K CTC179BJ,CK,CM,DJ,DL
R5083	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179CJ,DK
R5084	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179BJ,CK,CM,DJ,DL
R5084	205346	XX80440-400		RES CMF 1/10W 5% 5.6K CTC179CJ,DK
R5085	205346	XX80440-400		RES CMF 1/10W 5% 5.6K CTC179BJ,CK,CM,DJ,DL
R5085	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179CJ,DK
R5086	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179BJ,CK,CM,DJ,DL
R5086	205346	XX80440-400		RES CMF 1/10W 5% 5.6K CTC179CJ,DK
R5087	205346	XX80440-400		RES CMF 1/10W 5% 5.6K CTC179BJ,CK,CM,DJ,DL
R5087	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179CJ,DK
R5088	192100	XX20471-950		RES CMF 1/10W 5% 1K CTC179BJ,CK,CM,DJ,DL
R5088	205346	XX80440-400		RES CMF 1/10W 5% 5.6K CTC179CJ,DK
R5089	502210	XX11057-930	*	RES CC 1/2W 10% 1K CTC179BJ,CK,CM,DJ,DL
R5089	502122	XX15052-070	*	RES CC 1/2W 10% 220R CTC179CJ,DK
R5201	181488	XX11064-940		RES CMF 1/8W 2% 330R
R5202	197628	XX40438-170		RES CMF 1/10W 2% 1.5K
R5203	181481	XX40437-590		RES CMF 1/8W 2% 270R
R5204	181488	XX11064-940		RES CMF 1/8W 2% 330R
R5205	205328	XX50886-400		RES CMF 1/10W 2% 68R
R5207	227409	XX40440-590		RES MF 2W 5% 330R
R5208	190462	XX40437-600		RES CMF 1/8W 2% 1K
R5210	205308	XX30944-250		RES CMF 1/10W 5% 10R
R5211	174340	XX11064-650		RES CMF 1/8W 5% 22R
R5213	829210	XX30943-570	*	RES CFFP 1/4W 2% 1K
R5214	227408	XX11060-370		RES CF 1/2W 2% 100K
R5215	831143	XX50883-990	*	RES MFFP 1W 5% 430R
R5216	829027	XX70433-370	*	RES CFFP 1/4W 5% 27R
R5217	175310	XX40440-580	*	RES MF 2W 5% 220R
R5218	192080	XX30944-260		RES CMF 1/10W 5% 22R
R5219	227408	XX11060-370		RES CF 1/2W 2% 100K
R5220	197638	XX30944-150		RES CMF 1/10W 2% 1K
R5221	210480	XX60442-570	*	RES MF 1W 5% 27R
R5222	197628	XX40438-170		RES CMF 1/10W 2% 1.5K
R5224	227403	XX15050-450	*	RES CF 1/2W 5% 5.6R
R5225	227403	XX15050-450	*	RES CF 1/2W 5% 5.6R
U5001	227396	XX15000-60A		IC AKB
	173269	2863229-001		CLIP, TRANSISTOR

PIX-IN-PIX (S2T2PIP) CBA

	226788	2F43012-501	●	CIRCUIT COMPLETE CTC179BJ,CJ,CK,CM, DJ,DK,DL
C102	192060	XX11059-300		CAPCC 1000PF K SL 50V
C103	192060	XX11059-300		CAPCC 1000PF K SL 50V
C104	205227	XX20468-970		CAPCC 330PF J NPO 50V
C105	192060	XX11059-300		CAPCC 1000PF K SL 50V
C106	192060	XX11059-300		CAPCC 1000PF K SL 50V
C107	192060	XX11059-300		CAPCC 1000PF K SL 50V
C108	192060	XX11059-300		CAPCC 1000PF K SL 50V
C110	181090	XX11053-520		CAPCC 39PF J NPO 50V
C111	192060	XX11059-300		CAPCC 1000PF K SL 50V
C112	192060	XX11059-300		CAPCC 1000PF K SL 50V
C113	192060	XX11059-300		CAPCC 1000PF K SL 50V
C114	192060	XX11059-300		CAPCC 1000PF K SL 50V
C115	214032	XX30938-720		CAPCC 150PF J NPO 50V
C116	192060	XX11059-300		CAPCC 1000PF K SL 50V
C117	223146	XX11059-530		CAPCC 1.5PF B NPO 50V
C118	211039	XX80436-530		CAPCC 180PF J NPO 50V
C119	192060	XX11059-300		CAPCC 1000PF K SL 50V
C120	192060	XX11059-300		CAPCC 1000PF K SL 50V
C121	192060	XX11059-300		CAPCC 1000PF K SL 50V
C122	192060	XX11059-300		CAPCC 1000PF K SL 50V
C124	214732	XX30938-740		CAPCC 470PFF J NPO 50
C125	227089	XX60441-520		CAPCC 100PF G NPO 50V
C201	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C202	195689	XX11059-340		CAPCC .01UF K X7R 50V
C203	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C204	205230	XX20469-340		CAPCC 4700PF K X7R 50V
C205	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C206	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C207	197600	XX11059-320		CAPCC 1000PF K X7R 50V
C208	197600	XX11059-320		CAPCC 1000PF K X7R 50V

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
C301	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C302	214740	XX50882-230	CAPCC 10PF J NPO 50V
C304	155050	XX20466-940	CAPCC 1000PF K SL 50V
C305	214760	XX20459-493	CAPCC 27PF J N750 50V
C306	214027	XX80436-490	CAPCC 12PF J NPO 50V
C307	197604	XX11058-640	CAPCC 27PF J NPO 50V
C308	194902	XX50882-370	CAPCC 120PF J NPO 50V
C309	197604	XX11058-640	CAPCC 27PF J NPO 50V
C310	227269	XX90571-050	CAPCC .75PF B NPO 50V
C311	214760	XX20459-493	CAPCC 27PF J N750 50V
C312	227077	XX40426-002	CAPCC 18PF G N220 50V
C313	214732	XX30938-740	CAPCC 470PFF J NPO 50V
C314	214732	XX30938-740	CAPCC 470PFF J NPO 50V
C316	192060	XX11059-300	CAPCC 1000PF K SL 50V
C401	197604	XX11058-640	CAPCC 27PF J NPO 50V
C407	194911	XX50882-360	CAPCC 33PF J NPO 50V
C411	194911	XX50882-360	CAPCC 33PF J NPO 50V
C424	193340	XX11058-670	CAPCC 100PF J NPO 50V
C501	215555	XX40432-770	CAPCC .01UF K X7R 50V
C502	214740	XX50882-230	CAPCC 10PF J NPO 50V
C503	214740	XX50882-230	CAPCC 10PF J NPO 50V
C504	192060	XX11059-300	CAPCC 1000PF K SL 50V
C505	202905	XX11058-650	CAPCC 39PF J NPO 50V
C506	205230	XX20469-340	CAPCC 4700PF K X7R 50V
C507	200141	XX20467-040	CAP POLY .1UF K 63V
C508	190548	XX30935-330	CAPCC 4700PF K X7R 50V
C509	192060	XX11059-300	CAPCC 1000PF K SL 50V
C510	192060	XX11059-300	CAPCC 1000PF K SL 50V
C511	155050	XX20466-940	CAPCC 1000PF K SL 50V
C601	192060	XX11059-300	CAPCC 1000PF K SL 50V
C602	193340	XX11058-670	CAPCC 100PF J NPO 50V
C603	195689	XX11059-340	CAPCC .01UF K X7R 50V
C604	192060	XX11059-300	CAPCC 1000PF K SL 50V
C605	205227	XX20468-970	CAPCC 330PF J NPO 50V
C606	195689	XX11059-340	CAPCC .01UF K X7R 50V
C607	174406	XX40432-440	CAPCC 22PF J NPO 50V
C610	192060	XX11059-300	CAPCC 1000PF K SL 50V
C612	192060	XX11059-300	CAPCC 1000PF K SL 50V
C614	192060	XX11059-300	CAPCC 1000PF K SL 50V
C701	227084	XX50882-870	CAPCC 1PF B NPO 50V
C702	227074	XX30939-310	CAPCC 2PF B NPO 50V
C703	226965	XX14004-580	CAPCC 2PF B N750 50V
C704	227084	XX50882-870	CAPCC 1PF B NPO 50V
C705	214760	XX20459-493	CAPCC 27PF J N750 50V
C707	227084	XX50882-870	CAPCC 1PF B NPO 50V
C708	227088	XX60441-470	CAPCC 3PF B NPO 50V
C709	193339	XX30938-700	CAPCC 68PF J NPO 50V
C710	227088	XX60441-470	CAPCC 3PF B NPO 50V
C711	227084	XX50882-870	CAPCC 1PF B NPO 50V
C712	227088	XX60441-470	CAPCC 3PF B NPO 50V
C713	192060	XX11059-300	CAPCC 1000PF K SL 50V
C714	192060	XX11059-300	CAPCC 1000PF K SL 50V
C715	192060	XX11059-300	CAPCC 1000PF K SL 50V
C716	155050	XX20466-940	CAPCC 1000PF K SL 50V
C717	155050	XX20466-940	CAPCC 1000PF K SL 50V
C8101	193043	XX80434-350	CAP LYTC 47UFF M 25V
C8102	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8103	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8104	214728	XX80434-330	CAP LYTC 100UF M 10V
C8105	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8106	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C8107	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8108	151578	XX11054-710	CAP LYTC 33UF M 35V
C8109	220344	XX15047-900	CAPCC 680PF J NPO 50V
C8110	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8111	193043	XX80434-350	CAP LYTC 47UFF M 25V
C8112	205551	XX30938-730	CAPCC 220PF J NPO 50V
C8113	202908	XX90570-950	CAPCC 3900PF K X7R 50V
C8114	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8115	218513	XX10038-490	CAP LYTC 1UF M 100V
C8116	207857	XX30939-280	CAPCC .047UF Z Y5V 50V
C8117	190499	XX40433-160	CAP LYTC 4.7UF M 100V
C8118	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8121	207865	XX50880-260	CAP LYTC 330UF M 25V
C8122	227413	XX15041-140	CAPCC .15UF Z Y5V 50V
C8123	227413	XX15041-140	CAPCC .15UF Z Y5V 50V
C8124	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C8201	174402	XX90567-810	CAPCC 10PF J NPO 50V
C8202	214740	XX50882-230	CAPCC 10PF J NPO 50V
C8203	174402	XX90567-810	CAPCC 10PF J NPO 50V
C8205	220132	XX15041-150	CAPCC .33UF Z Y5V 25V
C8206	193340	XX11058-670	CAPCC 100PF J NPO 50V
C8207	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8208	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8209	202905	XX11058-650	CAPCC 39PF J NPO 50V
C8210	202907	XX20468-940	CAPCC 15PF J NPO 50V
C8211	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C8212	220218	XX15047-980	CAPCC .033UF K X7R 50V
C8213	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C8214	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C8215	197600	XX11059-320	CAPCC 1000PF K X7R 50V
C8216	215555	XX40432-770	CAPCC .01UF K X7R 50V
C8220	215555	XX40432-770	CAPCC .01UF K X7R 50V
C8221	194911	XX50882-360	CAPCC 33PF J NPO 50V
C8222	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8223	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8224	197604	XX11058-640	CAPCC 27PF J NPO 50V
C8225	214740	XX50882-230	CAPCC 10PF J NPO 50V
C8226	214741	XX80436-520	CAPCC 56PF J NPO 50V
C8227	200139	XX20466-910	CAPCC 560PF J NPO 50V
C8229	214738	XX70430-440	CAPCC .068UF Z Y5V 50V
C8230	197604	XX11058-640	CAPCC 27PF J NPO 50V
C8231	214740	XX50882-230	CAPCC 10PF J NPO 50V
C8232	190499	XX40433-160	CAP LYTC 4.7UF M 100V
C8233	156239	XX30935-880	CAP LYTC 10UF M 63V
C8234	192846	XX20467-220	CAP LYTC 68UF M 16V
C8235	214738	XX70430-440	CAPCC .068UF Z Y5V 50V
C8237	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8238	193340	XX11058-670	CAPCC 100PF J NPO 50V
C8239	192846	XX20467-220	CAP LYTC 68UF M 16V
C8240	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8241	162787	XX70427-970	CAP LYTC 22UF M 50V
C8242	193340	XX11058-670	CAPCC 100PF J NPO 50V
C8243	214741	XX80436-520	CAPCC 56PF J NPO 50V
C8244	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8245	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8246	190552	XX70427-610	CAPCC .1UF K X7R 50V
C8247	190500	XX70428-070	CAP LYTC 180UF M 16V
C8248	214732	XX30938-740	CAPCC 470PFF J NPO 50V
C8249	178188	XX20466-850	CAPCC 220PF J NPO 50V
C8301	190542	XX80433-750	CAPCC 56PF J NPO 50V
C8302	190542	XX80433-750	CAPCC 56PF J NPO 50V
C8303	200144	XX70430-390	CAPCC 6800PF K X7R 50V
C8304	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8305	222008	XX15041-170	CAPCC .1UF K X7R 25V
C8306	193043	XX80434-350	CAP LYTC 47UFF M 25V
C8307	214740	XX50882-230	CAPCC 10PF J NPO 50V
C8308	214740	XX50882-230	CAPCC 10PF J NPO 50V
C8309	192060	XX11059-300	CAPCC 1000PF K SL 50V
C8310	214740	XX50882-230	CAPCC 10PF J NPO 50V
C8350	217298	XX15040-860	CAPCC .22UF Z Y5V 25V
C8351	214742	XX60441-440	CAPCC 3300PF K X7R 50V
C8352	197601	XX30939-240	CAPCC .022UF K X7R 50V
C8353	214742	XX60441-440	CAPCC 3300PF K X7R 50V
C8354	197601	XX30939-240	CAPCC .022UF K X7R 50V
C8355	214742	XX60441-440	CAPCC 3300PF K X7R 50V
C8356	197601	XX30939-240	CAPCC .022UF K X7R 50V
C8360	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8361	195689	XX11059-340	CAPCC .01UF K X7R 50V
C8363	197601	XX30939-240	CAPCC .022UF K X7R 50V
C8364	197601	XX30939-240	CAPCC .022UF K X7R 50V
CF8101	181125	2821737-001	FILTER
CF8102	195702	XX70438-300	FILTER CERAMIC
CR101	215493	XX50887-840	DIODE
CR102	211863	XX40439-390	DIODE
CR103	215493	XX50887-840	DIODE
CR104	227051	XX15050-100	DIODE
CR105	211863	XX40439-390	DIODE
CR106	215493	XX50887-840	DIODE
CR107	215493	XX50887-840	DIODE
CR108	211863	XX40439-390	DIODE
CR109	215493	XX50887-840	DIODE
CR110	215493	XX50887-840	DIODE
CR111	215493	XX50887-840	DIODE
CR112	215493	XX50887-840	DIODE
CR113	215493	XX50887-840	DIODE
CR301	215493	XX50887-840	DIODE
CR303	215492	XX60445-480	DIODE
CR304	215492	XX60445-480	DIODE
CR305	215492	XX60445-480	DIODE
CR306	215493	XX50887-840	DIODE
CR307	227082	XX15045-960	DIODE

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
CR501	215493	XX50887-840	DIODE
CR601	227051	XX15050-100	DIODE
CR602	227051	XX15050-100	DIODE
CR701	215492	XX60445-480	DIODE
CR702	211863	XX40439-390	DIODE
CR703	215493	XX50887-840	DIODE
CR8203	164874	XX30946-680	DIODE
CR8204	164874	XX30946-680	DIODE
CR8205	164874	XX30946-680	DIODE
CR8301	164874	XX30946-680	DIODE
CR8302	164874	XX30946-680	DIODE
E706	227055	XX15052-49A	JACK PHONO-RF IN
FB8201	226467	XX50895-750	BEAD
FB8202	226467	XX50895-750	BEAD
FB8203	226467	XX50895-750	BEAD
FB8204	226467	XX50895-750	BEAD
FB8205	226467	XX50895-750	BEAD
FB8206	226467	XX50895-750	BEAD
FL101	181470	XX30953-360	FILTER LC HIGH PASS
J8003	226978	XX70449-810	CONNECTOR 3 PIN Y/C IN
J8006	226525	XX30959-990	CONNECTOR 2 PIN GROUND
JC102	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC103	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC104	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC105	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC201	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC301	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC302	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC351	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC352	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC353	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC354	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC355	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC356	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC357	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC358	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC359	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC360	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC361	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC702	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC703	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC706	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC707	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC711	205408	XX80440-510	RES CMF 1/10W 10% .0R
JC712	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC713	181161	XX50885-530	RES CMF 1/8W 5% .0R
JC714	205408	XX80440-510	RES CMF 1/10W 10% .0R
L102	227003	2G32023-14A	COIL AIR
L103	227005	2G32024-14A	COIL AIR
L104	226992	2G32022-10A	COIL AIR
L105	227006	2G32024-16A	COIL AIR
L106	200559	XX47025-302	COIL 3.9UH
L107	226987	2G32023-01A	COIL AIR
L108	226998	2G32023-09A	COIL AIR
L109	226993	2G32023-03A	COIL AIR
L110	226994	2G32023-07A	COIL AIR
L111	226998	2G32023-09A	COIL AIR
L112	226995	2G32024-03A	COIL AIR
L113	227000	2G32024-08A	COIL AIR
L114	226996	2G32023-06A	COIL AIR
L115	227000	2G32024-08A	COIL AIR
L301	227427	2G32023-04A	COIL AIR
L302	226988	2G32021-06A	COIL AIR
L303	227005	2G32024-14A	COIL AIR
L304	226983	2G32021-02A	COIL AIR
L305	226984	2G32021-03A	COIL AIR
L306	226990	2G32024-02A	COIL AIR
L307	226991	2G32023-02A	COIL AIR
L308	226985	2G32021-05A	COIL AIR
L601	226999	2G32024-07A	COIL AIR
L602	226999	2G32024-07A	COIL AIR
L603	227002	2G32024-12A	COIL AIR
L604	227001	2G32024-09A	COIL AIR
L701	226986	2G32022-01A	COIL AIR
L702	226986	2G32022-01A	COIL AIR
L703	226989	2G32022-09A	COIL AIR

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
L704	226996	2G32023-06A	COIL AIR
L8101	195709	XX90574-530	COIL 1UH
L8102	195709	XX90574-530	COIL 1UH
L8103	197613	XX80440-520	COIL 15UH
L8104	227422	XX15057-790	COIL 1.8UH
L8105	190017	XX50886-880	COIL 27UH
L8106	160186	XX30944-680	COIL 100UH
L8201	195712	XX20472-080	COIL 22UH
L8202	190729	XX30944-670	COIL 47UFH
L8203	197613	XX80440-520	COIL 15UH
L8204	149167	XX50886-760	COIL 68UH
Q101	226973	XX15053-050	TRANSISTOR VHF RF
Q301	227008	XX15041-860	TRANSISTOR UHF RF
Q501	219028	XX15040-850	TRANSISTOR BS1 SWITCH
Q502	215495	XX11070-770	TRANSISTOR LOOP SPEEDUP
Q503	215496	XX30946-660	TRANSISTOR LOOP SPEEDUP
Q504	215495	XX11070-770	TRANSISTOR LOOP FILTER
Q505	219028	XX15040-850	TRANSISTOR BS4 SWITCH
Q506	219028	XX15040-850	TRANSISTOR BSM SWITCH
Q507	219028	XX15040-850	TRANSISTOR BSU SWITCH
Q508	219028	XX15040-850	TRANSISTOR BSV SWITCH
Q601	226981	XX90584-680	TRANSISTOR IF AMP
Q8101	215496	XX30946-660	TRANSISTOR SYNC BUFFER
Q8102	215496	XX30946-660	TRANSISTOR VID BUFFER
Q8103	215495	XX11070-770	TRANSISTOR DE-EMPH DRV
Q8104	215495	XX11070-770	TRANSISTOR DE-EMPH BUF
Q8105	215495	XX11070-770	TRANSISTOR RF AGC DELY
Q8106	215495	XX11070-770	TRANSISTOR RF AGC BUF
Q8201	215495	XX11070-770	TRANSISTOR BURST GATE
Q8202	215495	XX11070-770	TRANSISTOR BURST GATE
Q8204	215495	XX11070-770	TRANSISTOR VIDEO BUFF
Q8205	215496	XX30946-660	TRANSISTOR VIDEO BUFF
Q8206	215496	XX30946-660	TRANSISTOR CHROMA BUFF
Q8207	215496	XX30946-660	TRANSISTOR CHROMA BUFF
Q8208	215496	XX30946-660	TRANSISTOR LUMA BUFFER
Q8209	215496	XX30946-660	TRANSISTOR LUMA BUFFER
Q8302	215496	XX30946-660	TRANSISTOR EEPROM SW
Q8350	215495	XX11070-770	TRANSISTOR REF BUFFER
Q8351	215495	XX11070-770	TRANSISTOR 1V REF
Q8401	215495	XX11070-770	TRANSISTOR VERT DR BUFF
R101	205312	XX40438-250	RES CMF 1/10W 5% 15R
R102	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R103	197633	XX11066-480	RES CMF 1/10W 5% 47K
R104	197633	XX11066-480	RES CMF 1/10W 5% 47K
R105	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R106	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R107	205381	XX90574-330	RES CMF 1/10W 2% 470K
R108	192103	XX20471-900	RES CMF 1/10W 5% 39R
R109	205334	XX70434-050	RES CMF 1/10W 2% 150R
R111	175325	XX50882-950	RES CF 1/4W 5% 100R
R112	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R113	197633	XX11066-480	RES CMF 1/10W 5% 47K
R114	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R115	197633	XX11066-480	RES CMF 1/10W 5% 47K
R116	197633	XX11066-480	RES CMF 1/10W 5% 47K
R117	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R118	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R119	176818	XX30942-940	RES CMF 1/8W 5% 100R
R120	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R121	197642	XX90574-420	RES CMF 1/10W 5% 3K
R122	205414	XX70434-360	RES CMF 1/10W 10% 8.2R
R123	192080	XX30944-260	RES CMF 1/10W 5% 22R
R124	192080	XX30944-260	RES CMF 1/10W 5% 22R
R126	192084	XX50886-630	RES CMF 1/10W 5% 100K
R203	197633	XX11066-480	RES CMF 1/10W 5% 47K
R204	197633	XX11066-480	RES CMF 1/10W 5% 47K
R301	205411	XX11066-620	RES CMF 1/10W 10% 4.7R
R302	197633	XX11066-480	RES CMF 1/10W 5% 47K
R303	194917	XX60444-280	RES CMF 1/10W 2% 3K
R304	192100	XX20471-950	RES CMF 1/10W 5% 1K
R305	197633	XX11066-480	RES CMF 1/10W 5% 47K
R306	197906	XX90574-300	RES CMF 1/10W 2% 82K
R307	205365	XX70434-130	RES CMF 1/10W 2% 51K
R308	192084	XX50886-630	RES CMF 1/10W 5% 100K
R309	205330	XX40438-120	RES CMF 1/10W 2% 91R
R310	175412	XX50882-970	RES CF 1/4W 5% 470R
R311	175325	XX50882-950	RES CF 1/4W 5% 100R
R312	175322	XX40435-670	RES CF 1/4W 5% 47K
R313	197633	XX11066-480	RES CMF 1/10W 5% 47K
R314	192084	XX50886-630	RES CMF 1/10W 5% 100K

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R315	197633	XX11066-480	RES CMF 1/10W 5% 47K
R316	175322	XX40435-670	RES CF 1/4W 5% 47K
R317	205330	XX40438-120	RES CMF 1/10W 2% 91R
R318	194926	XX90574-240	RES CMF 1/10W 2% 470R
R319	197633	XX11066-480	RES CMF 1/10W 5% 47K
R320	197633	XX11066-480	RES CMF 1/10W 5% 47K
R402	197633	XX11066-480	RES CMF 1/10W 5% 47K
R408	175322	XX40435-670	RES CF 1/4W 5% 47K
R409	175322	XX40435-670	RES CF 1/4W 5% 47K
R501	175055	XX11059-640	RES CF 1/4W 5% 1K
R502	175055	XX11059-640	RES CF 1/4W 5% 1K
R503	192084	XX50886-630	RES CMF 1/10W 5% 100K
R504	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R505	205365	XX70434-130	RES CMF 1/10W 2% 51K
R506	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R507	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R508	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R509	215216	XX30947-650	RES CMF 1/10W 1% 1M
R510	215214	XX40440-760	RES CMF 1/10W 1% 191K
R511	215215	XX20474-280	RES CMF 1/10W 1% 37.4K
R512	197904	XX40438-210	RES CMF 1/10W 2% 20K
R513	178287	XX11064-770	RES CMF 1/8W 5% 4.7K
R514	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R515	192093	XX90574-320	RES CMF 1/10W 2% 220K
R516	194916	XX30944-180	RES CMF 1/10W 2% 6.8K
R517	181073	XX90573-600	RES CMF 1/8W 5% 7.5K
R518	176818	XX30942-940	RES CMF 1/8W 5% 100R
R601	192091	XX50886-580	RES CMF 1/10W 5% 2K
R602	192084	XX50886-630	RES CMF 1/10W 5% 100K
R603	192084	XX50886-630	RES CMF 1/10W 5% 100K
R604	197903	XX20471-960	RES CMF 1/10W 5% 1.8K
R605	194926	XX90574-240	RES CMF 1/10W 2% 470R
R606	176367	XX80439-630	RES CMF 1/8W 5% 47R
R609	205365	XX70434-130	RES CMF 1/10W 2% 51K
R610	192090	XX50886-720	RES CMF 1/10W 10% 3.3R
R701	205348	XX70434-100	RES CMF 1/10W 2% 7.5K
R702	195937	XX50886-610	RES CMF 1/10W 5% 10K
R704	205365	XX70434-130	RES CMF 1/10W 2% 51K
R705	192084	XX50886-630	RES CMF 1/10W 5% 100K
R706	205365	XX70434-130	RES CMF 1/10W 2% 51K
R707	155007	XX70433-140	RES CMF 1/8W 5% 1.2K
R708	194920	XX90574-260	RES CMF 1/10W 2% 1.2K
R709	192084	XX50886-630	RES CMF 1/10W 5% 100K
R8101	205338	XX70434-070	RES CMF 1/10W 2% 560R
R8102	205334	XX70434-050	RES CMF 1/10W 2% 150R
R8103	190462	XX40437-600	RES CMF 1/8W 2% 1K
R8104	192084	XX50886-630	RES CMF 1/10W 5% 100K
R8105	207839	XX80440-430	RES CMF 1/10W 5% 43K
R8106	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8107	829A10	XX80439-840 *	RES CF 1/4W 5% 1R
R8108	195929	XX11066-240	RES CMF 1/10W 2% 330R
R8109	197638	XX30944-150	RES CMF 1/10W 2% 1K
R8110	220317	XX11072-680	RES CMF 1/8W 1% 1K
R8111	214143	XX80443-130	RES CMF 1/10W 1% 1K
R8112	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8113	192072	XX70434-300	RES CMF 1/10W 5% 330K
R8114	192094	XX30944-220	RES CMF 1/10W 2% 100K
R8115	197645	XX50886-600	RES CMF 1/10W 5% 5.1K
R8116	174364	XX60443-710	RES CMF 1/8W 5% 10K
R8117	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R8118	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R8119	202917	XX80440-460	RES CMF 1/10W 5% 1.5M
R8120	195937	XX50886-610	RES CMF 1/10W 5% 10K
R8121	205308	XX30944-250	RES CMF 1/10W 5% 10R
R8122	197642	XX90574-420	RES CMF 1/10W 5% 3K
R8123	197471	XX11066-500	RES CMF 1/10W 5% 68K
R8124	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8125	197625	XX60444-260	RES CMF 1/10W 2% 1.6K
R8126	205340	XX11066-270	RES CMF 1/10W 2% 1.3K
R8127	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8128	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8129	195937	XX50886-610	RES CMF 1/10W 5% 10K
R8130	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8131	197633	XX11066-480	RES CMF 1/10W 5% 47K
R8132	195929	XX11066-240	RES CMF 1/10W 2% 330R
R8133	177599	XX30939-410	RES CF 1/4W 5% 91R
R8134	205354	XX70434-250	RES CMF 1/10W 5% 15K
R8135	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R8136	197907	XX60444-390	RES CMF 1/10W 5% 3.9K
R8137	176801	XX11059-710	RES CF 1/4W 5% 56K
R8138	215195	XX20471-920	RES CMF 1/10W 5% 220R
R8139	205334	XX70434-050	RES CMF 1/10W 2% 150R

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R8140	176818	XX30942-940	RES CMF 1/8W 5% 100R
R8201	205354	XX30944-190	RES CMF 1/10W 2% 15K
R8202	205346	XX90574-270	RES CMF 1/10W 2% 5.6K
R8203	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8204	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8205	176887	XX60442-530 *	RES MF 1W 5% 2.4R
R8206	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8207	176818	XX30942-940	RES CMF 1/8W 5% 100R
R8208	192091	XX50886-580	RES CMF 1/10W 5% 2K
R8209	197473	XX20471-930	RES CMF 1/10W 5% 510R
R8210	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8211	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8212	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8213	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8214	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8215	205336	XX11066-410	RES CMF 1/10W 5% 300R
R8216	201144	XX50886-670	RES CMF 1/10W 5% 1M
R8217	192091	XX50886-580	RES CMF 1/10W 5% 2K
R8218	192079	XX80440-470	RES CMF 1/10W 5% 2.2M
R8219	192093	XX70434-290	RES CMF 1/10W 5% 220K
R8220	192075	XX90574-360	RES CMF 1/10W 5% 51R
R8224	201143	XX20471-980	RES CMF 1/10W 5% 6.2K
R8225	192087	XX40438-300	RES CMF 1/10W 5% 6.8K
R8226	192082	XX40438-290	RES CMF 1/10W 5% 1.5K
R8227	195937	XX50886-610	RES CMF 1/10W 5% 10K
R8229	192104	XX11066-420	RES CMF 1/10W 5% 390R
R8230	175741	XX11064-640	RES CMF 1/8W 5% 10R
R8231	181488	XX11064-940	RES CMF 1/8W 2% 330R
R8232	197638	XX30944-150	RES CMF 1/10W 2% 1K
R8233	197637	XX20471-940	RES CMF 1/10W 5% 680R
R8234	192091	XX50886-580	RES CMF 1/10W 5% 2K
R8235	192091	XX50886-580	RES CMF 1/10W 5% 2K
R8236	192087	XX40438-300	RES CMF 1/10W 5% 6.8K
R8237	197907	XX60444-390	RES CMF 1/10W 5% 3.9K
R8238	197473	XX20471-930	RES CMF 1/10W 5% 510R
R8239	195942	XX90574-400	RES CMF 1/10W 5% 470R
R8240	192089	XX70434-060	RES CMF 1/10W 2% 220R
R8241	175325	XX50882-950	RES CF 1/4W 5% 100R
R8244	194912	XX20471-910	RES CMF 1/10W 5% 56R
R8245	194912	XX20471-910	RES CMF 1/10W 5% 56R
R8246	205346	XX80440-400	RES CMF 1/10W 5% 5.6K
R8247	205346	XX80440-400	RES CMF 1/10W 5% 5.6K
R8249	215200	XX50886-560	RES CMF 1/10W 5% 750R
R8250	175055	XX11059-640	RES CF 1/4W 5% 1K
R8251	200186	XX30939-360	RES CF 1/4W 5% 10R
R8252	175325	XX50882-950	RES CF 1/4W 5% 100R
R8253	215200	XX50886-560	RES CMF 1/10W 5% 750R
R8254	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8256	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8257	227412	XX11067-580	RES CF 1/4W 5% 1.5R
R8258	192103	XX20471-900	RES CMF 1/10W 5% 39R
R8262	197903	XX20471-870	RES CMF 1/10W 2% 1.8K
R8301	201144	XX50886-670	RES CMF 1/10W 5% 1M
R8302	174364	XX60443-710	RES CMF 1/8W 5% 10K
R8303	174367	XX80439-790	RES CMF 1/8W 2% 22K
R8304	174348	XX30942-990	RES CMF 1/8W 5% 1K
R8305	174348	XX30942-990	RES CMF 1/8W 5% 1K
R8306	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8307	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8308	192084	XX50886-630	RES CMF 1/10W 5% 100K
R8309	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8310	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8315	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8316	195937	XX50886-610	RES CMF 1/10W 5% 10K
R8317	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8318	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8319	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8320	180369	XX70433-150	RES CMF 1/8W 5% 2K
R8321	829010	XX20471-500	RES CF 1/4W 5% 10R
R8323	192084	XX50886-630	RES CMF 1/10W 5% 100K
R8324	192084	XX50886-630	RES CMF 1/10W 5% 100K
R8325	175055	XX11059-640	RES CF 1/4W 5% 1K
R8326	175325	XX50882-950	RES CF 1/4W 5% 100R
R8327	175325	XX50882-950	RES CF 1/4W 5% 100R
R8328	175325	XX50882-950	RES CF 1/4W 5% 100R
R8329	218508	XX70434-200	RES CMF 1/10W 5% 100R
R8331	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R8332	178287	XX11064-770	RES CMF 1/8W 5% 4.7K
R8350	215218	XX70437-540	RES CMF 1/8W 1% 26.1K
R8351	215217	XX80443-080	RES CMF 1/10W 1% 10K
R8352	215218	XX70437-540	RES CMF 1/8W 1% 26.1K
R8353	220130	XX11072-420	RES CMF 1/8W 1% 10K

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
R8354	215218	XX70437-540	RES CMF 1/8W 1% 26.1K
R8355	220130	XX11072-420	RES CMF 1/8W 1% 10K
R8356	192091	XX50886-580	RES CMF 1/10W 5% 2K
R8357	215219	XX11071-220	RES CMF 1/10W 1% 14.3K
R8358	217317	XX50889-280	RES CMF 1/10W 1% 453R
R8359	197644	XX70434-220	RES CMF 1/10W 5% 820R
R8360	215199	XX90576-860	RES CMF 1/10W 1% 15.8K
R8361	215221	XX40440-830	RES CMF 1/10W 1% 100K
R8362	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8363	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8364	200180	XX20472-010	RES CMF 1/10W 5% 91K
R8365	215199	XX90576-860	RES CMF 1/10W 1% 15.8K
R8366	215221	XX40440-830	RES CMF 1/10W 1% 100K
R8367	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8368	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8369	200180	XX20472-010	RES CMF 1/10W 5% 91K
R8370	215199	XX90576-860	RES CMF 1/10W 1% 15.8K
R8371	215221	XX40440-830	RES CMF 1/10W 1% 100K
R8372	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8373	205245	XX30944-340	RES CMF 1/10W 5% 27K
R8374	200180	XX20472-010	RES CMF 1/10W 5% 91K
R8375	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R8376	191819	XX90573-640	RES CMF 1/8W 5% 300K
R8377	192097	XX30944-310	RES CMF 1/10W 5% 4.7K
R8378	191819	XX90573-640	RES CMF 1/8W 5% 300K
R8381	215200	XX50886-560	RES CMF 1/10W 5% 750R
R8382	215200	XX50886-560	RES CMF 1/10W 5% 750R
R8384	205371	XX30944-350	RES CMF 1/10W 5% 130K
R8385	205371	XX30944-350	RES CMF 1/10W 5% 130K
R8401	192100	XX20471-950	RES CMF 1/10W 5% 1K
R8402	192100	XX20471-950	RES CMF 1/10W 5% 1K
SF8101	227024	XX15045-90A	FILTER ACOUSTIC WAVE
SF8102	227023	XX15045-910	FILTER ACOUSTIC WAVE
U501	215533	XX11070-820	IC PHASE LOCKED LOOP
U701	227007	XX15041-330	IC MIXER/OSCILLATOR
U8101	227416	XX15046-23A	IC IF
U8201	227426	XX50888-830	IC PIP PROCESSOR
U8202	204280	XX80442-750	IC SRAM
U8203	227425	XX46006-700	IC VIDEO OVERLAY SW
U8204	215528	XX46007-400	IC SV REGULATOR
U8301	227415	XX15046-17B	IC TUNER MICRO
U8302	227843	XX11070-830	IC TUNER EEPROM
U8350	215534	XX11097-150	IC DAC OP AMP
Y501	182839	XX80444-040	CRYSTAL 4MHZ
Y8101	227417	XX15046-24A	RESONATOR 5.71MHZ
Y8201	197652	XX11073-470	CRYSTAL 14.31818MHZ
Y8301	182839	XX80444-040	CRYSTAL 4MHZ
	227424	XX15070-400	CLIP/BRACKET, U8201
	173269	2863229-001	CLIP, U8204
	227418	XX15052-35B	COVER, TUNER BOTTOM
	227414	XX15043-030	COVER, TUNER TOP
	227423	XX15060-25A	FRAME, TUNER BOTTOM
	227421	XX15055-670	HEATSINK, U8201
	227420	XX15052-46A	SHIELD, REAR COVER
	154397	2870460-001	WIRE SADDLE .66 HIGH
	154385	2870929-001	WIRE TIE, TWIST END

REMOTE TRANSMITTER ASSEMBLIES

CRK61A

CRK61A	221245	2G21028-01A	TRANSMITTER REMOTE
		XX50853-970	BATTERY, 1.5V AAA
	225649	8R18009-01A	DOOR, BATTERY

CRK70A1

CRK70A1	221115	2G21025-01A	TRANSMITTER REMOTE
		XX50853-970	BATTERY, 1.5V AAA
	225648	8R18004-01A	DOOR, BATTERY

CRK83A1

CRK83A1	221112	2G21027-01A	TRANSMITTER REMOTE
		XX50853-970	BATTERY, 1.5V AAA
	225633	8R18004-02A	DOOR, BATTERY

INSTRUMENT ASSEMBLIES

F32730SBFM1
F32730SBJX1
F35755MBFM1
F35755MBFM2
F35755MBJX2
F35760MBFM1
PS35130FM1
PS35160FM1
PS35160JX1

CPT	A8AEJ159	XX15090-210 *	PICTURE TUBE & YOKE ASY A80AEJ15X09 F32730
CPT	A89AEX159	XX15064-940 *	PICTURE TUBE & YOKE ASY A89AEX15X09 F35755FM1
CPT	A89AEJ159	XX15090-220 *	PICTURE TUBE & YOKE ASY A89AEJ15X09 F35755FM2,JX2
CPT	89AGF1010	1D01184-01A *	PICTURE TUBE & YOKE ASY A89AGF10X10 F35760
CPT	A89AFF159	XX15075-410 *	PICTURE TUBE & YOKE ASY A89AFF15X09 PS35130
CPT	89AGF1110	1D01178-01A *	PICTURE TUBE & YOKE ASY A89AGF11X10 PS35160
L4201	214078	2G09005-501 *	COIL DEGAUSSING 32 IN
L4201	214167	2G09005-505 *	COIL DEGAUSSING 35 IN
L4202	225821	1Z02002-003	COIL FIELD CANCEL
P1904	217803	XX11038-997	CONNECTOR
P6202	228876	XX15061-170	CONNECTOR
SPKR	226332	XX15040-420	SPEAKER 90MM 8 OHM 5W F32730, F35755,760, PS35130,160
SVM	228459	2G32006-503	COIL SVM F32730,F35755
	AH055	1468109-003	ADAPTER, 75-300 OHM
	BK1756	2G30109-N2A *	BACK, CABINET F35755
	BK1849	2G30106-N1A *	BACK, CABINET F35760
	BK1854	2G30108-N2A *	BACK, CABINET PS35130
	BK1823	2G30107-N1A *	BACK, CABINET PS35160
		1Q57603-01A	BOOK, CONNECTION F32730, F35755FM1,FM2
		1Q57400-01A	BOOK, CONNECTION F35755JX2,760
		1Q57400-F1A	BOOK, CONNECTION F35755JX2,760

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
		1Q57602-01B	BOOK, CONNECTION PS35130,160
		1Q57602-F1B	BOOK, CONNECTION (FRENCH) PS35160
		XX15079-240	BOOK, INSTRUCTION F32730
		XX15079-250	BOOK, INSTRUCTION (FRENCH) F32730
		1Q57594-01A	BOOK, INSTRUCTION F35755
		XX15079-820	BOOK, INSTRUCTION F35760
		1Q57493-01B	BOOK, INSTRUCTION PS35130,160
		1Q57493-F1B	BOOK, INSTRUCTION (FRENCH) PS35130,160
	217427	2P13002-02A	BUSHING, SPKR OVERLAY F35755,760
	229639	2R12008-01A	BUTTON, CAP F32730
	226005	XX15052-210	BUTTON, CAP F35755
	229621	2R12005-01A	BUTTON, CAP F35760
	226356	2R12003-02B	BUTTON, CAP PS35130,160
	229641	XX15064-570	BUTTON, CLUSTER F32730
	228451	XX15052-240	BUTTON, CLUSTER F35755
	229620	XX15062-470	BUTTON, CLUSTER F35760
	228538	XX15053-630	BUTTON, CLUSTER PS35130 160
	229640	2R12008-02A	BUTTON, POWER F32730
	228450	XX15052-200	BUTTON, POWER F35755
	229622	2R12005-02A	BUTTON, POWER F35760
	228537	2R12003-01B	BUTTON, POWER PS35130, 160
	228452	2F29014-02A	CIRCUIT, AV IN F32730, F35755,760
	227333	2F29014-01A	CIRCUIT, HEADPHONE/AV PS35130,160
	220093	2877304-02A *	CLIP, DEGAUSS HANGER
	226013	2G30109-F1A	FRAME, F35755,760, PS35130,160
	229643	2R16005-01A	GRILLE, SPEAKER F32730
	226008	XX15050-240	GRILLE, SPEAKER F35755
	229619	2R16004-01A	GRILLE, SPEAKER F35760
	228449	XX15055-500	JACK, PHONO
	226354	XX15054-110	LOGO, PROSCAN PS35130
	228530	XX15054-100	LOGO, PROSCAN PS35160
	MK1852	2G30103-A2A *	MASK AND BACK ASSEMBLY F32730
	MK1755	2G30109-A3C *	MASK, CABINET FRONT F35755
	MK1848	2G30106-A2B *	MASK, CABINET FRONT F35760
	MK1853	2G30108-A4A *	MASK, CABINET FRONT PS35130
	MK1819	2G30107-A1C *	MASK, CABINET FRONT PS35160
	229638	2G30103-S1A *	PANEL, CONTROL F32730
	139301	1479290-001	RETAINER, WIRE TIE
	180834	2876791-001	SCREW, KINE MTG F32730
	226014	XX15052-310	SCREW, KINE MTG F35755, 760
	205509	2876410-001	SCREW, 10-16 X .5 HL
	180147	903420-032	TAPE, SVM BRACKET
		2G21025-01A	TRANSMITTER, REMOTE CRK70A1 STK # 221115 F32730,F35755,760
		2G21028-01A	TRANSMITTER, REMOTE CRK61A1 STK # 221245 PS35160
		2G21027-01A	TRANSMITTER, REMOTE CRK83A1 STK # 221112 PS35130,160
	229642	2G30103-E1A	WINDOW, IR F32730
	228446	2G30109-E2A	WINDOW, IR F35755
	229617	2G30106-E1A	WINDOW, IR F35760
	228550	2G30108-E2A	WINDOW, IR PS35130,160

SYMBOL NO.	STOCK NO.	DRAWING NO.	DESCRIPTION
			G35831ATLM1
			G35851LALM1
			PS35660LM1
CPT	A89AEJ159	XX15090-220 *	PICTURE TUBE & YOKE ASY A89AEJ15X09 G35831
CPT	89AGF1010	1D01184-01A *	PICTURE TUBE & YOKE ASY A89AGF10X10 G35851
CPT	89AGF1110	1D01178-01A *	PICTURE TUBE & YOKE ASY A89AGF11X10 PS35660
L4201	214167	2G09005-505 *	COIL DEGAUSSING 35 IN
L4202	225821	1Z02002-003	COIL FIELD CANCEL
P1904	217803	XX11038-997	CONNECTOR
P6202	228876	XX15061-170	CONNECTOR
SVM	228459	2G32006-503	COIL SVM G35831
	AH055	1468109-003	ADAPTER, 75-300 OHM
	BK1856	8R52014-34A *	BACK, COVER G35831
	BK1863	8R52022-04A *	BACK, COVER G35851
	BK1845	8R52022-01A *	BACK, COVER PS35660
	BK1857	8R52013-18A	BACK, STORAGE G35831
	BK1864	8R52013-21A	BACK, STORAGE G35851
	BK1843	8R52013-16A	BACK, STORAGE PS35660
		1Q57603-01B	BOOK, CONNECTION G35831,851
		1Q57602-01B	BOOK, CONNECTION PS35660
		XX15083-110	BOOK, INSTRUCTION G35831
		XX15083-840	BOOK, INSTRUCTION G35851
		1Q57593-01B	BOOK, INSTRUCTION PS35660
	207926	1U99700-035	BRACKET, SHELF G35851, PS35660
	229651	1U99700-104	BUSHING, GRILLE G35831
	229307	2P13002-01A	BUSHING, G35851,PS35660
	225801	6R12005-01A	BUTTON, CAP G35831, PS35660
	225802	6R12005-02A	BUTTON, CAP POWER G35831,PS35660
	229306	XX15062-110	BUTTON, CLUSTER G35831, PS35660
	160991	2832006-001 *	CAP, KINE COVER
	225852	1R54001-01A	CASTER, FIXED G35831
	225835	4R54006-01A	CASTER, SWIVEL G35831
	229784		CASTER, FIXED G35851
	229300		CASTER, SWIVEL G35851, PS35660
	225798	XX15051-070	CASTER, FIXED PS35660
	203524	6R54001-01A	CASTER, SWIVEL PS35660
	205524	2F26003-501	CIRCUIT, CROSSOVER PS35660
	228452	2F29014-02A	CIRCUIT, AV IN G35831, 851
	227333	2F29014-01A	CIRCUIT, HEADPHONE/AV PS35660
	229303		CONNECTOR, PANEL G35851,PS35660
	229650	6R60005-01A	COVER, APRON G35831
	229301	2R08009-01C	FRAME, KINE MTG G35831, 851,PS35660
	229648	1U99700-119	GLASS, DOOR G35831
	229783	6R56002-11A	GLASS, DOOR G35851
	229302	6R56002-10A	GLASS, DOOR PS35660
	229646	6R65019-01A	GRILLE, W/CLOTH G35831
	229786	1P82010-01A	HINGE, DOOR G35831
	229785		HINGE, DOOR G35851
	218940		HINGE, DOOR PS35660
	228449	XX15055-500	JACK, PHONO
	229649	1U99700-128	LATCH, DOOR G35831

REPLACEMENT PARTS (Continued)

(See Product Safety Note on first page of this parts list)

SYMBOL NO.	STOCK NO.	DRAWING NO.		DESCRIPTION
	210609			LATCH, DOOR G35851, PS35660
	250044	6R31001-01B		LOGO, RCA G35831
	228530	XX15054-100		LOGO, PROSCAN PS35660
	MK1855	2G30108-A2A	*	MASK, BASIC G35831
	MK1862	2G30107-A5A	*	MASK, BASIC G35851
	MK1844	2G30107-A6A	*	MASK, BASIC PS35660
	229645	2G30108-H1A		PANEL, CONTROL G35831, 851
	229305	2G30107-H1A		PANEL, CONTROL PS35660
	229304	2R14008-01B	*	PANEL, JACK
	205545	8R15002-01A	*	PLATE, SPKR MTG PS35660
	218935	1U99700-092		PLATE, STRIKE G35831
	212225			PLATE, STRIKE G35851, PS35660
	139301	1479290-001		RETAINER, WIRE TIE
	226014	XX15052-310		SCREW, KINE MTG
	205509	2876410-001		SCREW, 10-16 X .5 HL
	205260	XX48036-600		SPEAKER, 51MM 8 OHM 20W G35851,PS35660
	229647	XX15070-670		SPEAKER, 80 X 160MM 8 OHM 15W G35831
	214725	XX50903-040		SPEAKER, 80 X 160MM 16 OHM 20W G35851
	204951	XX48063-800		SPEAKER, 130MM 8 OHM 25W PS35660
	180147	903420-032		TAPE, SVM BRACKET
		2G21025-01A		TRANSMITTER, REMOTE CRK70A1 STK # 221115 G35831,851
		2G21028-01A		TRANSMITTER, REMOTE CRK61A1 STK # 221245 PS35660
		2G21027-01A		TRANSMITTER, REMOTE CRK83A1 STK # 221112 PS35660
	221040	2G30084-E1A		WINDOW, IR

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THOMSON CONSUMER ELECTRONICS

Color Television Basic Service Data

RCA PROSCAN

Technical Publications
P.O. Box 1976 / Indianapolis, Indiana 46206

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SAFETY NOTICE

USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by stars ★ on schematics and on the parts list in this Service Data and its bulletins. Before servicing this instrument, it is important that the service technician read and follow the "Safety Precautions" and "Product Safety Notices" in the Basic Service Data.

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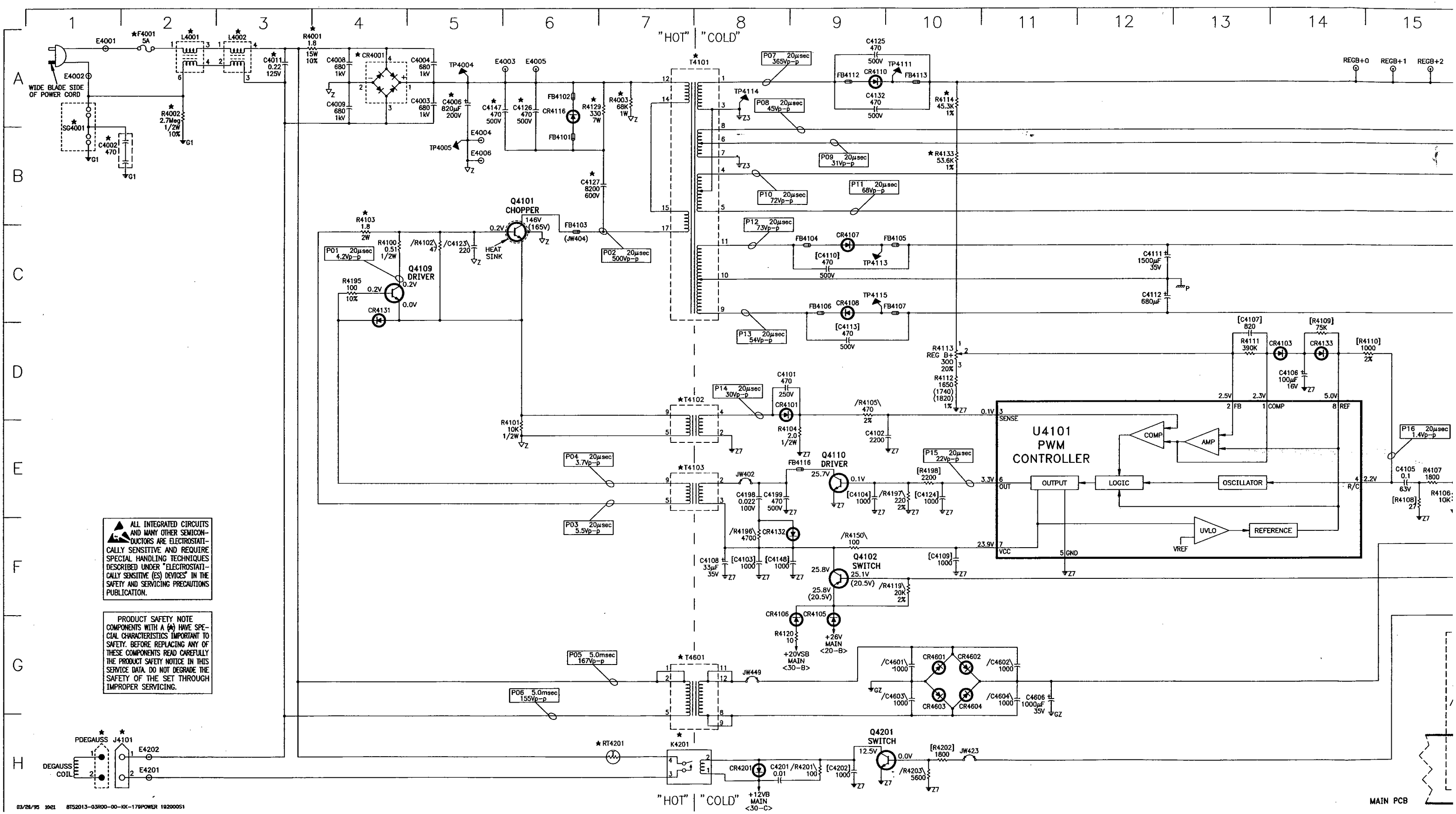
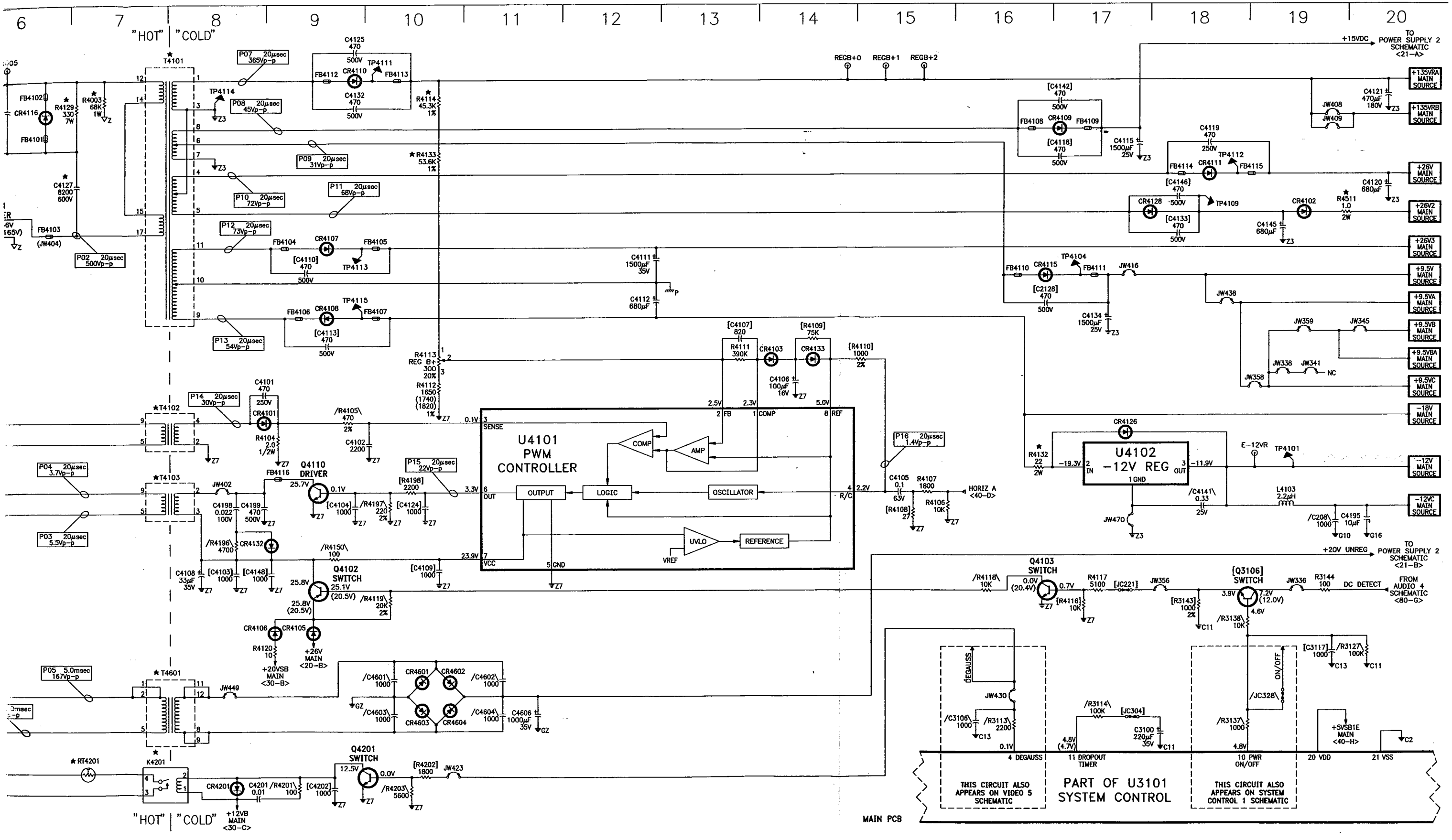
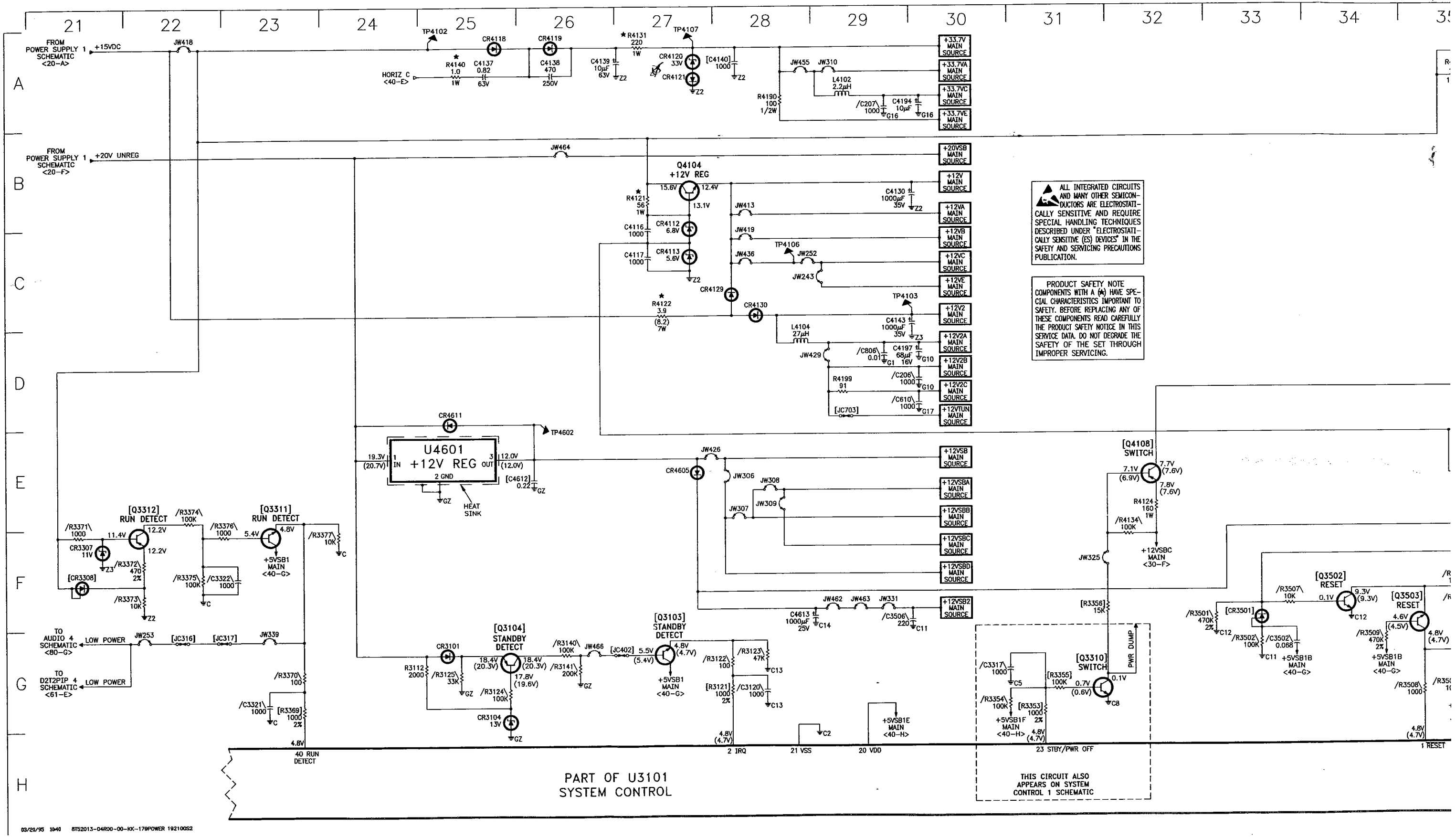
POWER SUPPLY SCHEMATIC (1 of 4)



POWER SUPPLY SCHEMATIC (1 of 4)



POWER SUPPLY SCHEMATIC (2 of 4)



POWER SUPPLY SCHEMATIC (2 of 4)

26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

CR4119 C4138 470 1C 250V

★R4131 220 1W

TP4107

CR4120 33V CR4121 [C4140] 1000 Z2

C4139 10µF 63V Z2

JW455 JW310 L4102 2.2µH

R4190 100 1/2W

/C207 1000 G16 C4194 10µF G16

+33.7V MAIN SOURCE
+33.7VA MAIN SOURCE
+33.7VC MAIN SOURCE
+33.7VE MAIN SOURCE

JW464

Q4104 +12V REG 15.6V 12.4V 13.1V

★R4121 56 1W

C4116 1000 CR4112 6.8V

C4117 1000 CR4113 5.6V Z2

C4130 1000µF 35V Z2

+20VSB MAIN SOURCE
+12V MAIN SOURCE

JW413 JW419 JW436 TP4106 JW252 JW243

+12VA MAIN SOURCE
+12VB MAIN SOURCE
+12VC MAIN SOURCE
+12VE MAIN SOURCE

CR4129 CR4130

★R4122 3.9 (8.2) 7W

TP4103

C4143 1000µF 35V Z3

L4104 27µH JW429

/C806 0.01 G1 C4197 68µF 16V G10

R4199 91

/C206 1000 G10 /C610 1000 G17

[JC703]

+12V2 MAIN SOURCE
+12V2A MAIN SOURCE
+12V2B MAIN SOURCE
+12V2C MAIN SOURCE
+12VTUN MAIN SOURCE

TP4602 GZ

JW426 CR4605 JW306 JW308 JW309 JW307

+12VSB MAIN SOURCE
+12VSBA MAIN SOURCE
+12VSBB MAIN SOURCE
+12VSBC MAIN SOURCE
+12VSBD MAIN SOURCE

JW462 JW463 JW331 C4613 1000µF 25V C14 /C3506 220 C11

+12VSB2 MAIN SOURCE

[Q3103] STANDBY DETECT

/R3140 100K JW466 [JC402] 5.5V (5.4V) 4.8V (4.7V)

/R3141 200K GZ

/R3122 100 /R3123 47K C13

[R3121] 1000 2% /C3120 1000 C13

+5VSB1 MAIN <40-G>

4.8V (4.7V) 2 IRQ C2 21 VSS +5VSB1E MAIN <40-H> 20 VDD

[Q4108] SWITCH 7.1V (6.9V) 7.7V (7.6V) 7.8V (7.6V)

R4124 160 1W

/R4134 100K

+12VSBC MAIN <30-F>

JW325 [R3356] 15K

[Q3310] SWITCH PWR DUMP 0.7V (0.6V) 0.1V

/C3317 1000 C5 [R3355] 100K

/R3354 100K [R3353] 1000 2%

+5VSB1F MAIN <40-H> 4.8V (4.7V) C8

4.8V (4.7V) 23 STBY/PWR OFF

THIS CIRCUIT ALSO APPEARS ON SYSTEM CONTROL 1 SCHEMATIC

PART OF U3101 SYSTEM CONTROL

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Q4107 +10.3V REG 15.6V 10.7V 11.4V

R4130 470 1/2W [C4135] 1000 Z2 CR4117 11V Z2

TP4105 JW434 JW241 JW242

L2904 10µH C2907 68µF 16V T1

+10.3V MAIN SOURCE
+10.3VA MAIN SOURCE
+10.3VC MAIN SOURCE

★R2560 2.0 CR2501 L2501 100µH C4136 68µF 16V Z2

+9V MAIN SOURCE

JW204 JW205 /C2501 0.1 A C2502 68µF 16V A

+9VA MAIN SOURCE
+9VB MAIN SOURCE

★R1427 8.2 1/2W Q4105 +7.6V REG 10.7V 7.6V 8.3V TP4108

+12VE MAIN <30-C> R4128 820

JW490 C4190 180µF 16V T6 JW246

/C4191 0.1 25V T

+7.6V MAIN SOURCE
+7.6VB MAIN SOURCE

C4131 10µF 63V T6 R4126 33 JW290 L2305 10µH

/C2316 0.01 T C2317 180µF 16V T

+7.6VBA MAIN SOURCE
+7.6VC MAIN SOURCE

JW247 L2701 10µH L2702 10µH

/C2713 0.1 25V T C2706 180µF 16V T C2707 180µF 16V G1

+7.6VX MAIN SOURCE
+7.6VY MAIN SOURCE
+7.6VZ MAIN SOURCE

CR4114 JW248

/R4123 4.7 10%

/C1493 0.1 25V T

+7.6VSB MAIN SOURCE

/R4145 10K T TP4110

R4138 680 ★R4137 2.7 2W Q4106 +5V REG 9.8V 5.3V 5.9V

+9.5V MAIN <20-C>

JW421 C4129 68µF 16V Z2

+5V MAIN SOURCE
+5VA MAIN SOURCE

L4101 2.2µH

+5VB MAIN SOURCE
+5VC MAIN SOURCE

/C205 1000 G10 C4196 10µF G16

JW316 JW317 JW318 JW360

+5VD MAIN SOURCE
+5VE MAIN SOURCE

JW227 JW228

+5VC MAIN SOURCE

★R2555 100

+5VGA MAIN SOURCE

[C2532] 0.33 25V A3

+5VTUN MAIN SOURCE

JW107 [C501] 0.01 G12

+5VSB1 MAIN SOURCE

[Q3501] RESET 9.4V (9.3V) 0.1V 5.5V (5.4V)

[Q3502] RESET 9.3V (9.3V) 0.1V

[Q3503] RESET 4.6V (4.5V) 4.8V (4.7V)

/R3505 100K /R3504 100K /R3503 20K 2% +12VSB2 MAIN <30-F>

/R3501 470K 2% C12 [CR3501] /R3507 10K

/R3502 100K C12 /C3502 0.068 C11 +5VSB1B MAIN <40-G>

/R3509 470K 2% +5VSB1B MAIN <40-G> C11

/R3508 1000 /R3506 100K +5VSB1B MAIN <40-G> /C3505 0.1 25V JW337 C2

4.8V (4.7V) 1 RESET

/JC401 JW427

Q4603 +5V REG 11.3V (11.2V) 4.8V (4.7V) 5.5V (5.4V)

R4609 2000 CR4612 5.6V /C4611 0.01 C14 C14

TP4603 R4610 1Meg /C4607 0.01 C14 C14

JW425 [JC307] JW314 JW303 JW313 L3101 10µH

/C3111 0.1 25V C2 C3112 47µF 25V C2 JW326

+5VSB1B MAIN SOURCE
+5VSB1C MAIN SOURCE
+5VSB1D MAIN SOURCE
+5VSB1E MAIN SOURCE
+5VSB1F MAIN SOURCE

MAIN PCB

POWER SUPPLY SCHEMATIC (3 of 4)

41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

A B C D E F G H

JW406 ★C4007 5000 120V /C4114\ 0.33 25V ★R4141 10 1W

TP2302 JW229 JW230 JW231 JW232 JW233 JW452 JW445 JW471 JW305 JW301 JW302 JW417 JW454 JW450 FB3101 EK5008A EK5024A JW410 JW411 JW407 JW263 JW264 JW214 JW215 JW224 JW217 JW216 JW271 JW218 JW221 JW238 JW403 JW330 JW365 JW364 JW363 JW362 JW329 JW367 JW366 JW273 JW270 JW272 JW289 JW257 JW121 JW150 JW152 JW153 JW111 JW105 JW807 JW135 JW110 JW112 JW106 JW113 JW120 JW142 JW144 JW143 JW141 JW114 JW184 JW214 JW215 JW118 JW155 JW117 JW148

EGNDIO2 EGNDPIP EGNDIO

T7 T6 T3 T8 T T1 K1 G1 G4 G5 G6 G12 G13 G17 G19 G10 G16 C14 C11 C12 C13 C9 C15 C10 C4 C8 C5 C3 V1 V2 V Z Z1 Z2 Z8 Z3 Z7 GZ C1 C2 A3 A1 A A2 PG2 PG1 PG A6 D A3 A5 A2 A15 A8 A7 H H3 H1 H2 NC

T-CHIP SHIELD

E304B

TUNER SHIELD

/JC711\ TP116

IN/OUT BRACKET

/JC305\

SYS CONTROL SHIELD

MAIN PCB | IN/OUT PCB

J4105 P1950

+18V 1 | +26V3 MAIN <20-C> | GND 3 | −18V 5 | −18V MAIN <20-D> | NC | NC

PART OF J4102 PART OF P1002

+12V 5 | −12V 4 | +5V 3 | FB PULSE 2 | DEGAUSS 1

+12VA MAIN <30-B> | −12V MAIN <20-E> | JW457 | +5VA MAIN <40-E>

PART OF J3004 PART OF P1004

LOW PWR 1 | +12V 2 | DET RESET 3 | DC DET 4 | XRP TST 5 | +10.3V 6 | ENABLE 7 | IM CLK 8 | DATA 9 | AVR 10 | CC VIDEO 11 | RESET 12 | IIC CLK 13

[JC314] | +12VSBA MAIN <30-E> | +10.3V MAIN <40-A>

13 12 11 10 9 8 7 6 5 4 3 2 1

+12VSBA IOUT SOURCE

CR1416 L1401 100µH C1474 1500µF 25V L2609 100µH /C2609\ 0.1 25V C2613 47µF 25V JW803

+9V IOUT SOURCE | +9VA IOUT SOURCE | +5V IOUT SOURCE | +5VA IOUT SOURCE

L1701 100µH JC10

POWER HEAT SINK

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MAIN PCB
IN/OUT PCB

FROM AUDIO 4 SCHEMATIC <61-B> | DELAY

PART OF J1501 PART OF PAVIN

AUDIO IN 4 | GND 3 | VIDEO IN 2 | +5V 1 | +5VA IOUT <50-F>

IN/OUT PCB | HEADPHONE PCB

46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

MAIN PCB | IN/OUT PCB

J4105 | P1950

+18V 1 — 6
+26V3 MAIN <20-C> — GND 3 — 5
4 — 4
P — −18V 5 — 3 — NC
−18V MAIN <20-D> — 6 — 2 — NC
1 — NC

PART OF J4102 | PART OF P1002

+12V 5 — 1
−12V 4 — 2
+5V 3 — 3
FB PULSE 2 — 4
DEGAUSS 1 — 5

PART OF J3004 | PART OF P1004

LOW PWR 1 — 13
+12V 2 — 12
DET RESET 3 — 11
DC DET 4 — 10
XRP TST 5 — 9
+10.3V 6 — 8
ENABLE 7 — 7
IM CLK 8 — 6
DATA 9 — 5
AVR 10 — 4
CC VIDEO 11 — 3
RESET 12 — 2
IIC CLK 13 — 1

+12VSBA IOUT SOURCE

JW121 NC
JW150
CR1416
L1401 100µH
JW152 JW153
C1474 1500µF 25V D
+9V IOUT SOURCE
+9VA IOUT SOURCE
L2609 100µH
/C2609\ 0.1 25V G
C2613 47µF 25V G
JW803
+5V IOUT SOURCE
+5VA IOUT SOURCE

JW111 JW105 A6 D
JW807 JW217 JW101
JW135 JW110 JW218 A3
A2 A5
JW112 G
JW106 A15
JW113 G10
JW120 CR1417 JW142 A8
NC JW144 JW143 CR1418 JW141 A7 H

JW114 JW184 NC NC
NC JW214 NC
NC JW215 NC

JW118 H3
JW155
JW117
H1 H2
POWER HEAT SINK

L1701 100µH
[JC103]
L1703 100µH
L1702 120µH
L2604 100µH
L6501 100µH

JW154 JW179
[C1907] 0.22 H1
[C1908] 0.22 H
C1961 0.1 63V H
C1962 2200µF 35V H
+26V IOUT SOURCE
+26VA IOUT SOURCE
+12V IOUT SOURCE
+12VA IOUT SOURCE
+12VD IOUT SOURCE
+12VE IOUT SOURCE
JW175
C1709 47µF 35V G
+12VF IOUT SOURCE
+12VW IOUT SOURCE
JW802
+12VX IOUT SOURCE
JW809
+12VY IOUT SOURCE
/C2606\ 0.1 25V G
C2607 68µF 16V G
+12VZ IOUT SOURCE
C6515 220µF 16V G
+12VDL IOUT SOURCE
/C1477\ 0.01 A2

R1414 100
CR1412
C1471 220µF 16V A2
[Q1412] +12V DELAY
/R1467\ 10K
10.6V 10.6V 9.8V

R1734 1200
JW102
/R1735\ 1200 G
C1733 47µF 35V G
+6V IOUT SOURCE
+6VA IOUT SOURCE
JW108
+6VB IOUT SOURCE
[JC113]
+6VD IOUT SOURCE

R1136 4700 NC
L1402 100µH
R1416 100
CR1415
[Q1413] −12V DELAY
−10.4V −10.3V −9.6V
C1473 220µF 16V A2
/R1469\ 10K
[Q1411] SWITCH
R1468 3300
/R1464\ 33K
0.6V −1.0V 1.3V
R1466 3300
/R1465\ 100K
−12V IOUT SOURCE
−12VA IOUT SOURCE
−12VDL IOUT SOURCE
JW216
−12VDLA IOUT SOURCE
/C1476\ 0.01 A2

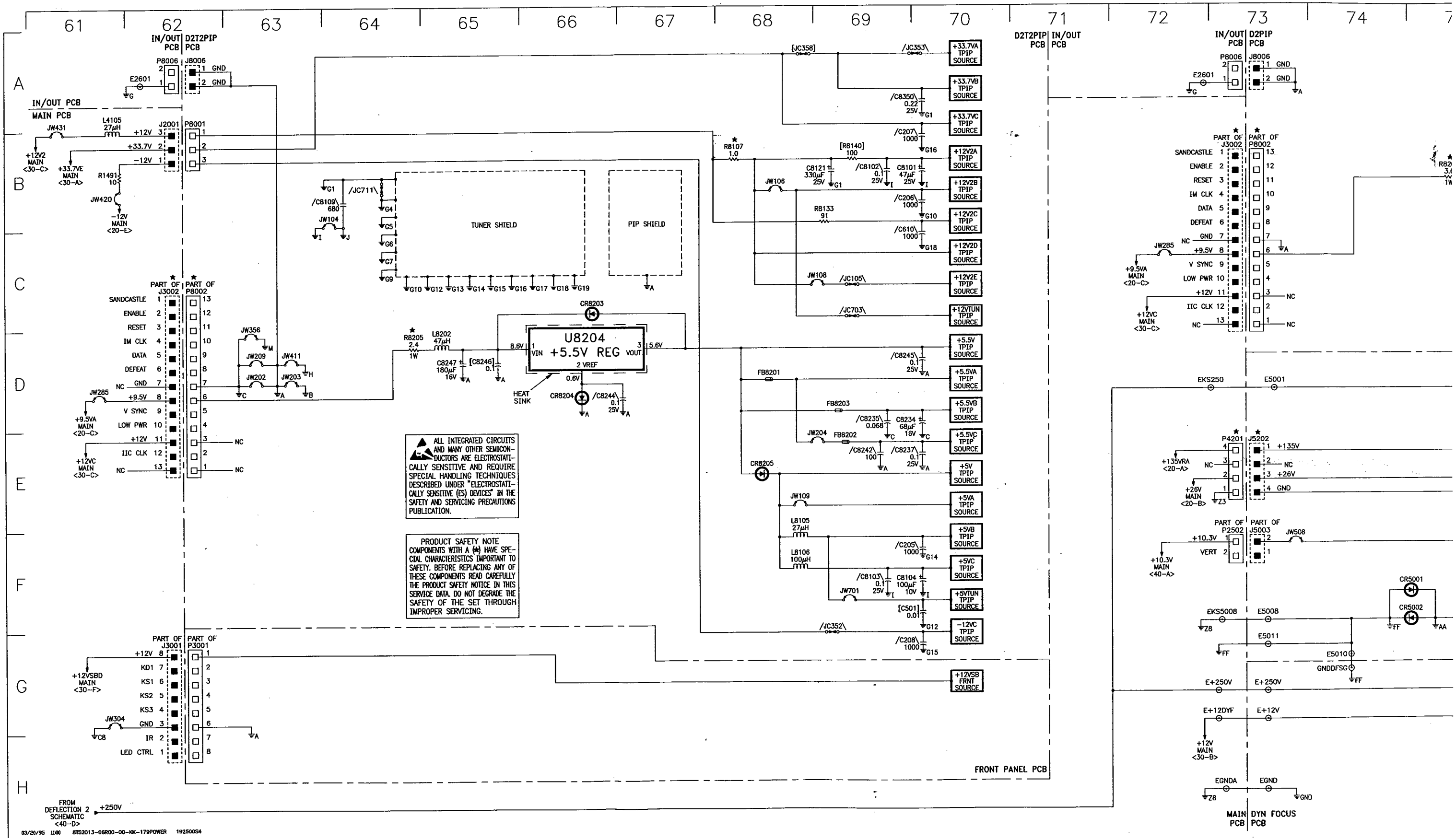
IN/OUT PCB
HEADPHONE PCB

PART OF J1501 | PART OF PAVIN

AUDIO IN 4 — 1
GND 3 — 2
G VIDEO IN 2 — 3 A
JW148 +5V 1 — 4
+5V HPAV SOURCE
+5VA IOUT <50-F>

IN/OUT PCB | HEADPHONE PCB

POWER SUPPLY SCHEMATIC (4 of 4)



POWER SUPPLY SCHEMATIC (4 of 4)

66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

D2T2PIP PCB | IN/OUT PCB | IN/OUT PCB | D2PIP PCB

[JC358] /JC353 +33.7VA TPIP SOURCE
+33.7VB TPIP SOURCE
/C8350 0.22 25V G1
+33.7VC TPIP SOURCE
/C207 1000 G16
R8107 1.0
[R8140] 100
C8121 330µF 25V G1
/C8102 0.1 25V I
C8101 47µF 25V I
+12V2A TPIP SOURCE
JW106
+12V2B TPIP SOURCE
/C206 1000 G10
R8133 91
+12V2C TPIP SOURCE
/C610 1000 G18
+12V2D TPIP SOURCE
JW108 /JC105 +12V2E TPIP SOURCE
/JC703 +12VTUN TPIP SOURCE
PIP SHIELD
G17 G18 G19 A
CR8203
U8204 +5.5V REG
1 VIN 2 VREF 3 VOUT 5.6V
0.6V
CR8204 /C8244 0.1 25V A
+5.5V TPIP SOURCE
/C8245 0.1 25V A
FB8201 +5.5VA TPIP SOURCE
FB8203 +5.5VB TPIP SOURCE
/C8235 0.068 C
C8234 68µF 16V C
JW204 FB8202 +5.5VC TPIP SOURCE
/C8242 100 A
/C8237 0.1 25V A
CR8205 +5V TPIP SOURCE
JW109 +5VA TPIP SOURCE
L8105 27µH +5VB TPIP SOURCE
/C205 1000 G14
L8106 100µH +5VC TPIP SOURCE
/C8103 0.1 25V I
C8104 100µF 10V I
JW701 +5VTUN TPIP SOURCE
[C501] 0.01 G12
/JC352 -12VC TPIP SOURCE
/C208 1000 G15
+12VSB FRNT SOURCE
FRONT PANEL PCB

P8006 J8006
E2601 G
1 GND
2 GND A

PART OF J3002 | PART OF P8002
SANDCASTLE 1 — 13
ENABLE 2 — 12
RESET 3 — 11
IM CLK 4 — 10
DATA 5 — 9
DEFEAT 6 — 8
NC GND 7 — 7
JW285 +9.5V 8 — 6 A
V SYNC 9 — 5
LOW PWR 10 — 4
+12V 11 — 3 NC
IIC CLK 12 — 2
NC 13 — 1 NC
+9.5VA MAIN <20-C>
+12VC MAIN <30-C>

R8205 3.6 1W
L8202 47µH
JW203
C8247 180µF 16V A
/C8246 0.1 A
CR8203
U8204 +5.5V REG
1 VIN 2 VREF 3 VOUT
CR8204 /C8244 0.1 25V A
/C8245 0.1 25V A +5.5V DPIP SOURCE
FB8201 +5.5VA DPIP SOURCE
FB8203 +5.5VB DPIP SOURCE
/C8235 0.068 A
C8234 68µF 16V A
JW204 FB8202 +5.5VC DPIP SOURCE
/C8242 100 A
/C8237 0.1 25V A

D2PIP PCB
CRT DRIVER PCB

EKS250 E5001
R5034 100 1W
C5001 0.47 400V FF
+250V CRTS SOURCE

P4201 J5202
+135VRA <20-A>
NC 3 — 2 NC
2 — 3 +26V
+26V MAIN <20-B> Z3
1 — 4 GND
1 +135V
+135V CRTS SOURCE
+26V CRTS SOURCE
JW503 GG GG

PART OF P2502 | PART OF J5003
+10.3V 1 — 2
+10.3V MAIN <40-A>
VERT 2 — 1
JW508
+10.3V CRTS SOURCE
L5005 10µH
L5004 10µH
R5079 10
C5010 180µF 16V FF
+10.3VA CRTS SOURCE
+10.3VB CRTS SOURCE
C5007 180µF 16V AB

CR5001
CR5002
EKS5008 Z8
E5008 FF AA
[JC511] AB
E5011 FF
E5010 GNDDFSG FF

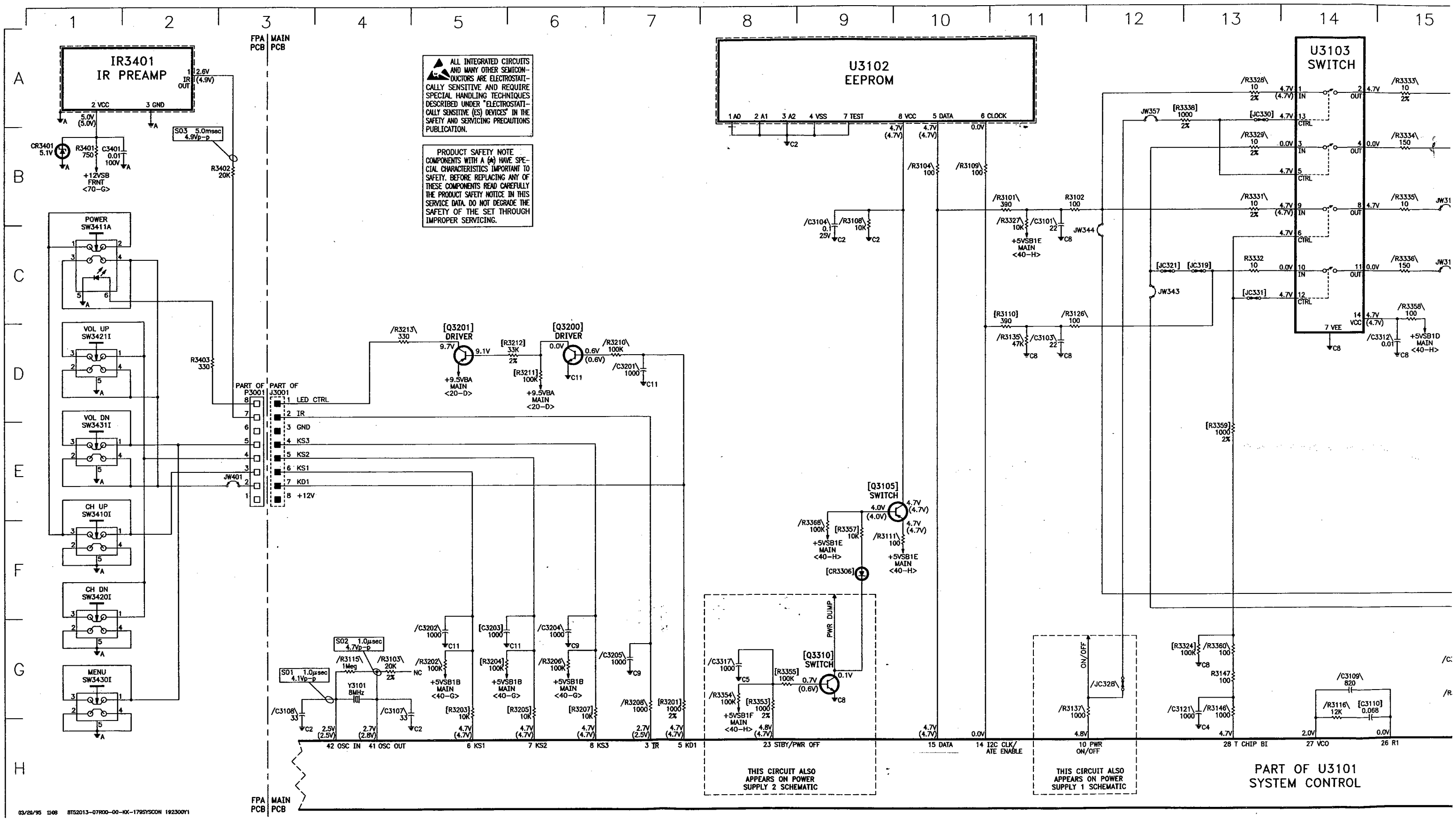
CRT DRIVER PCB
DYN FOCUS PCB

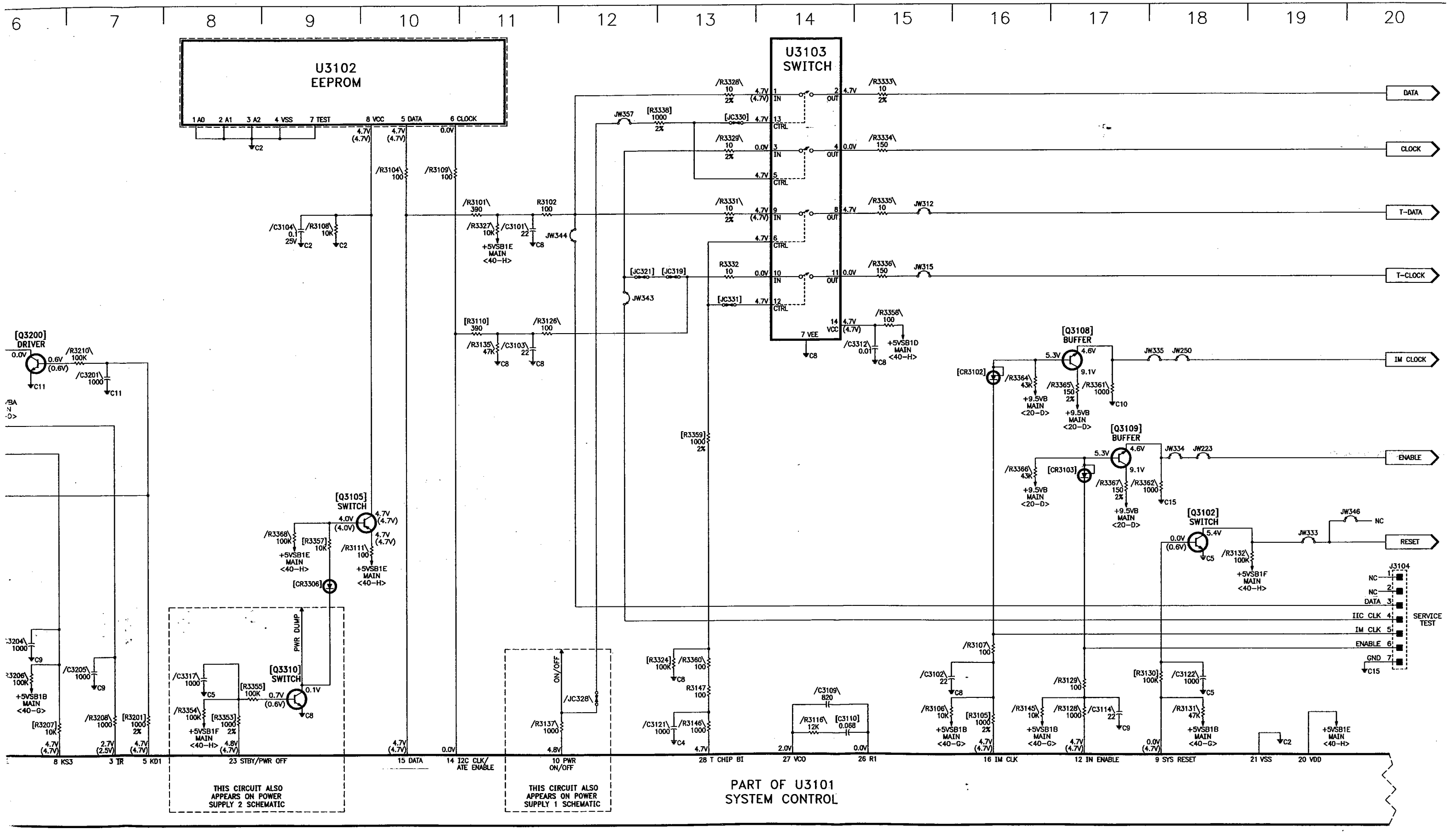
E+250V E+250V
+250V DYNF SOURCE
E+12DYF E+12V
+12V MAIN <30-B>
+12V DYNF SOURCE
R4731 510
C4726 33µF 35V GND
JW200
+6.8V DYNF SOURCE
CR4726 6.8V
[C4725] 0.1 GND
/R4732 1200 2% GND
+5.7V DYNF SOURCE
/R4733 6200 2% GND
[C4724] 0.1 GND

EGNDA Z8 EGND GND

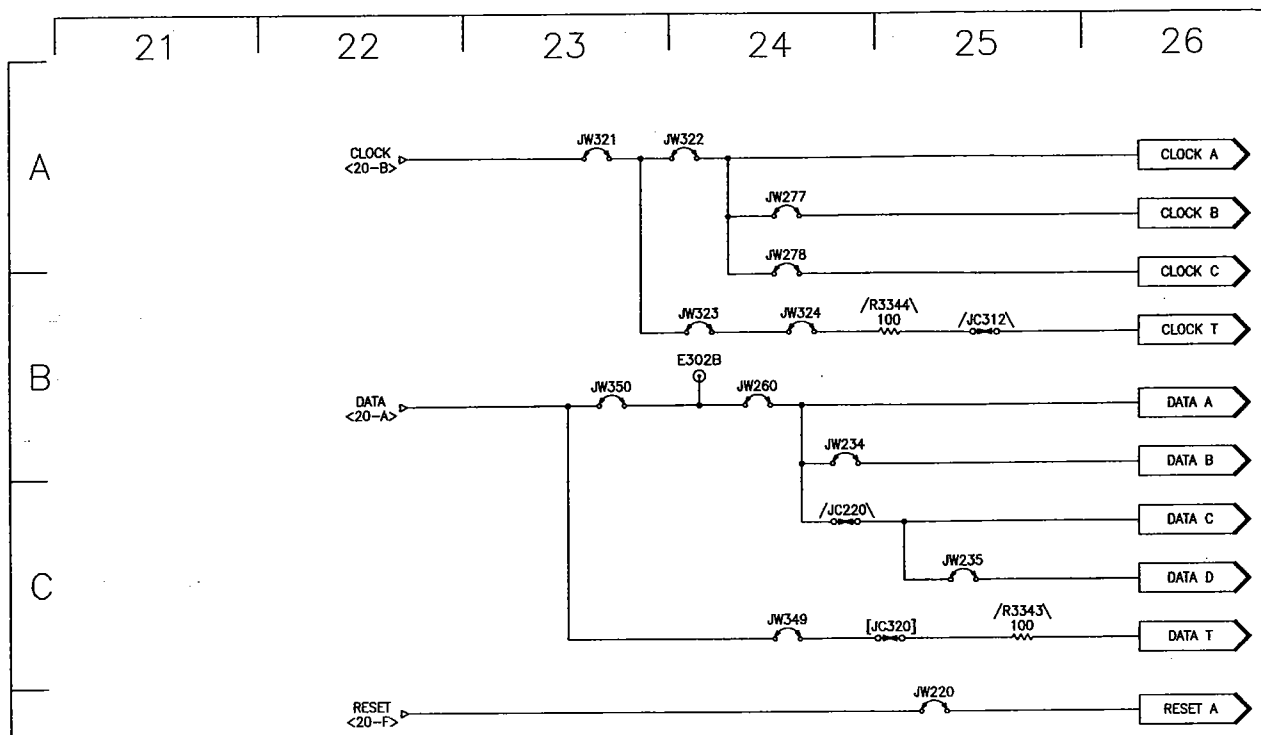
MAIN PCB | DYN FOCUS PCB

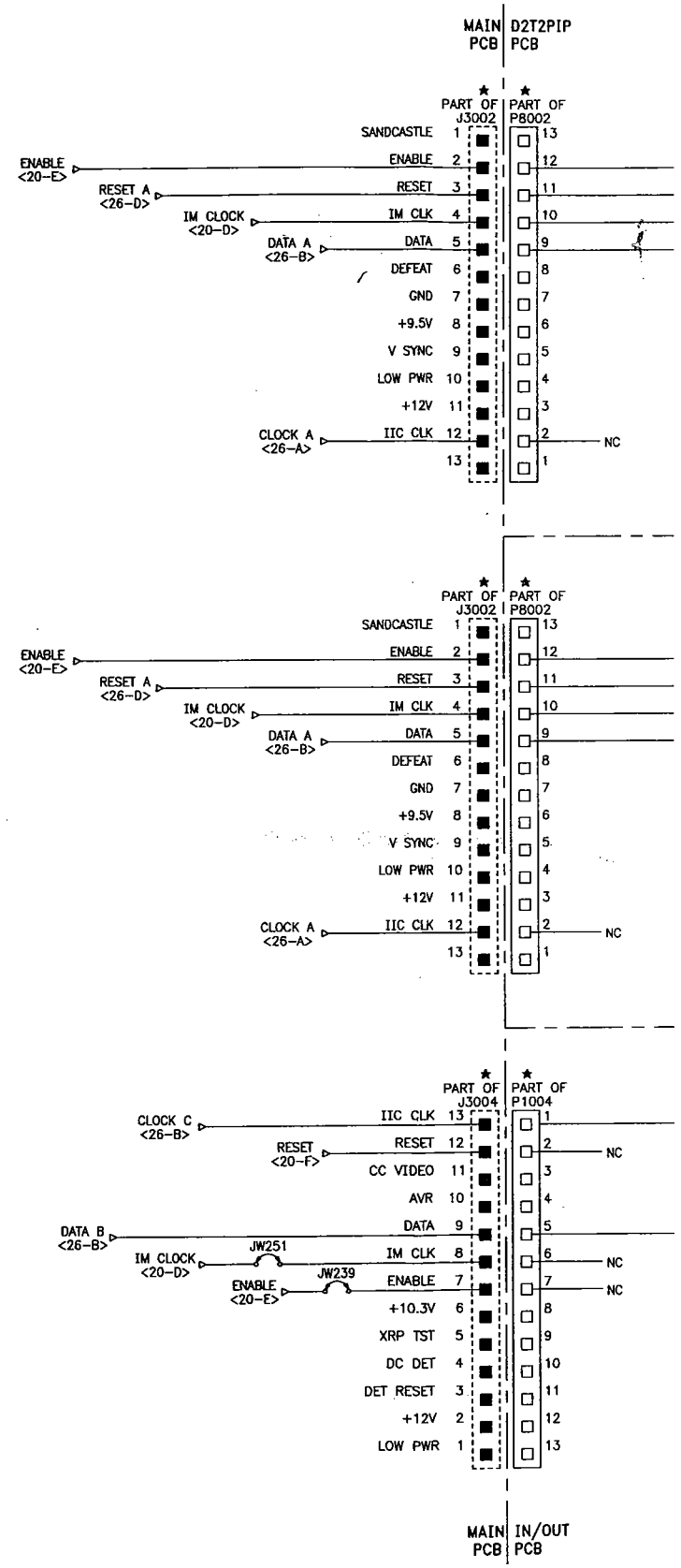
SYSTEM CONTROL SCHEMATIC (1 of 2)




6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
U3102 EEPROM
1 A0 2 A1 3 A2 4 VSS 7 TEST 8 VCC 5 DATA 6 CLOCK
U3103 SWITCH
DATA
CLOCK
T-DATA
T-CLOCK
IM CLOCK
ENABLE
RESET
SERVICE TEST
J3104
[Q3200] DRIVER
[Q3105] SWITCH
[Q3310] SWITCH
[Q3108] BUFFER
[Q3109] BUFFER
[Q3102] SWITCH
[CR3306]
[CR3102]
[CR3103]
+5VSB1E MAIN <40-H>
+5VSB1B MAIN <40-G>
+5VSB1F MAIN <40-H>
+9.5VB MAIN <20-D>
PWR DUMP
ON/OFF
THIS CIRCUIT ALSO APPEARS ON POWER SUPPLY 2 SCHEMATIC
THIS CIRCUIT ALSO APPEARS ON POWER SUPPLY 1 SCHEMATIC
PART OF U3101 SYSTEM CONTROL
8 KS3
3 IR
5 KD1
23 STBY/PWR OFF
15 DATA
14 I2C CLK/ ATE ENABLE
10 PWR ON/OFF
28 T CHIP BI
27 VCO
26 R1
16 IM CLK
12 IN ENABLE
9 SYS RESET
21 VSS
20 VDD

SYSTEM CONTROL SCHEMATIC (2 of 2)





SYSTEM CONTROL SCHEMATIC (2 of 2)

26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

CLOCK A
CLOCK B
CLOCK C
CLOCK T
DATA A
DATA B
DATA C
DATA D
DATA T
RESET A

MAIN PCB | D2T2PIP PCB

★ PART OF J3002 | ★ PART OF P8002

	SANDCASTLE	1	13
ENABLE <20-E>	ENABLE	2	12
RESET A <26-D>	RESET	3	11
IM CLOCK <20-D>	IM CLK	4	10
DATA A <26-B>	DATA	5	9
	DEFEAT	6	8
	GND	7	7
	+9.5V	8	6
	V SYNC	9	5
	LOW PWR	10	4
	+12V	11	3
CLOCK A <26-A>	IIC CLK	12	2 — NC
		13	1

CLOCK P1
DATA P1
ENABLE P1
RESET P1

D2T2PIP PCB
D2PIP PCB

★ PART OF J3002 | ★ PART OF P8002

	SANDCASTLE	1	13
ENABLE <20-E>	ENABLE	2	12
RESET A <26-D>	RESET	3	11
IM CLOCK <20-D>	IM CLK	4	10
DATA A <26-B>	DATA	5	9
	DEFEAT	6	8
	GND	7	7
	+9.5V	8	6
	V SYNC	9	5
	LOW PWR	10	4
	+12V	11	3
CLOCK A <26-A>	IIC CLK	12	2 — NC
		13	1

CLOCK P2
DATA P2
ENABLE P2
RESET P2

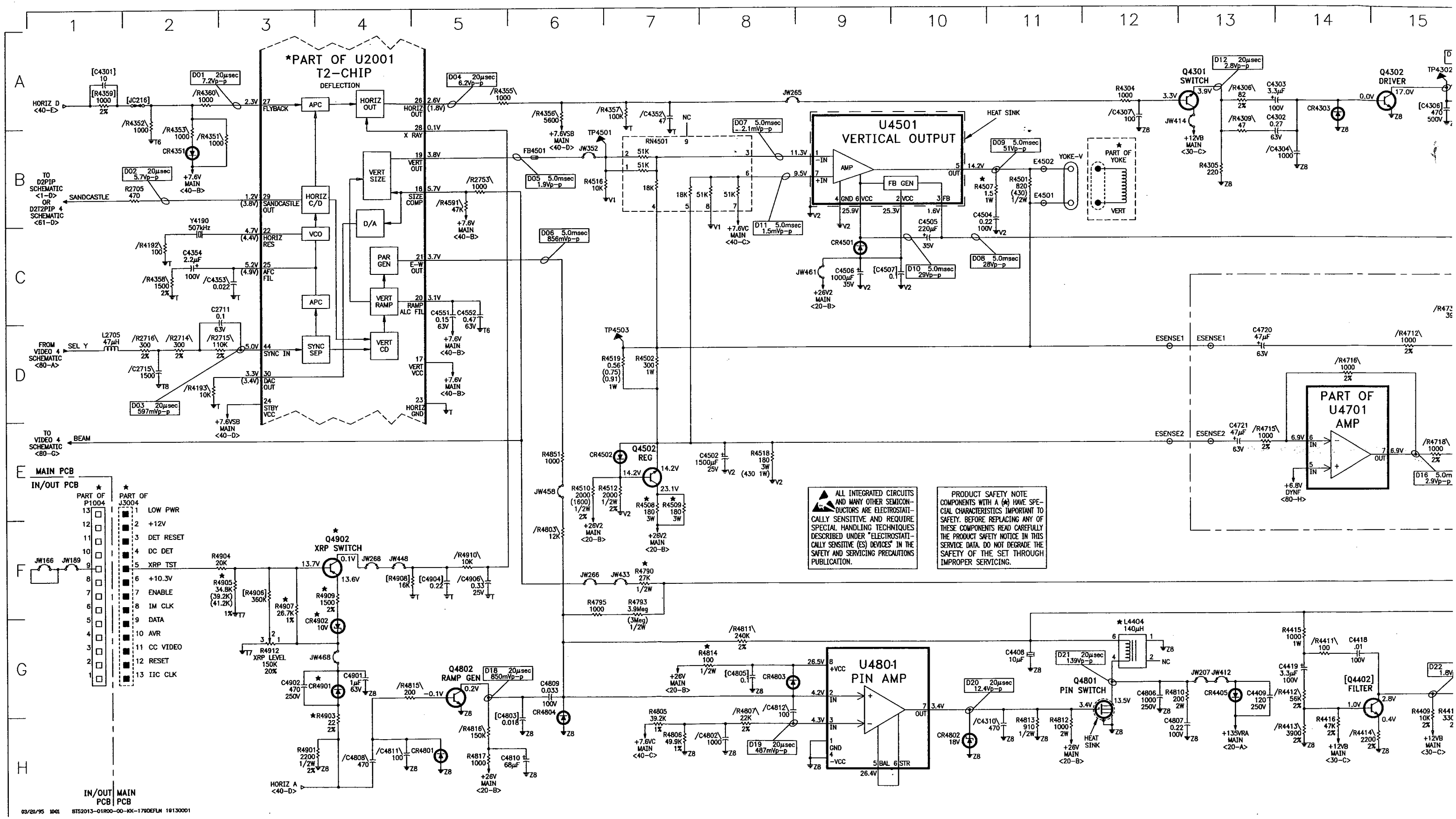
D2PIP PCB
IN/OUT PCB

★ PART OF J3004 | ★ PART OF P1004

CLOCK C <26-B>	IIC CLK	13	1 — JW187 — CLOCK N; /JC107\ — CLOCK NA
RESET <20-F>	RESET	12	2 — NC
	CC VIDEO	11	3
	AVR	10	4
DATA B <26-B>	DATA	9	5 — JW188 — DATA N
IM CLOCK <20-D> JW251	IM CLK	8	6 — NC
ENABLE <20-E> JW239	ENABLE	7	7 — NC
	+10.3V	6	8
	XRP TST	5	9
	DC DET	4	10
	DET RESET	3	11
	+12V	2	12
	LOW PWR	1	13

MAIN PCB | IN/OUT PCB

DEFLECTION SCHEMATIC (1 of 2)



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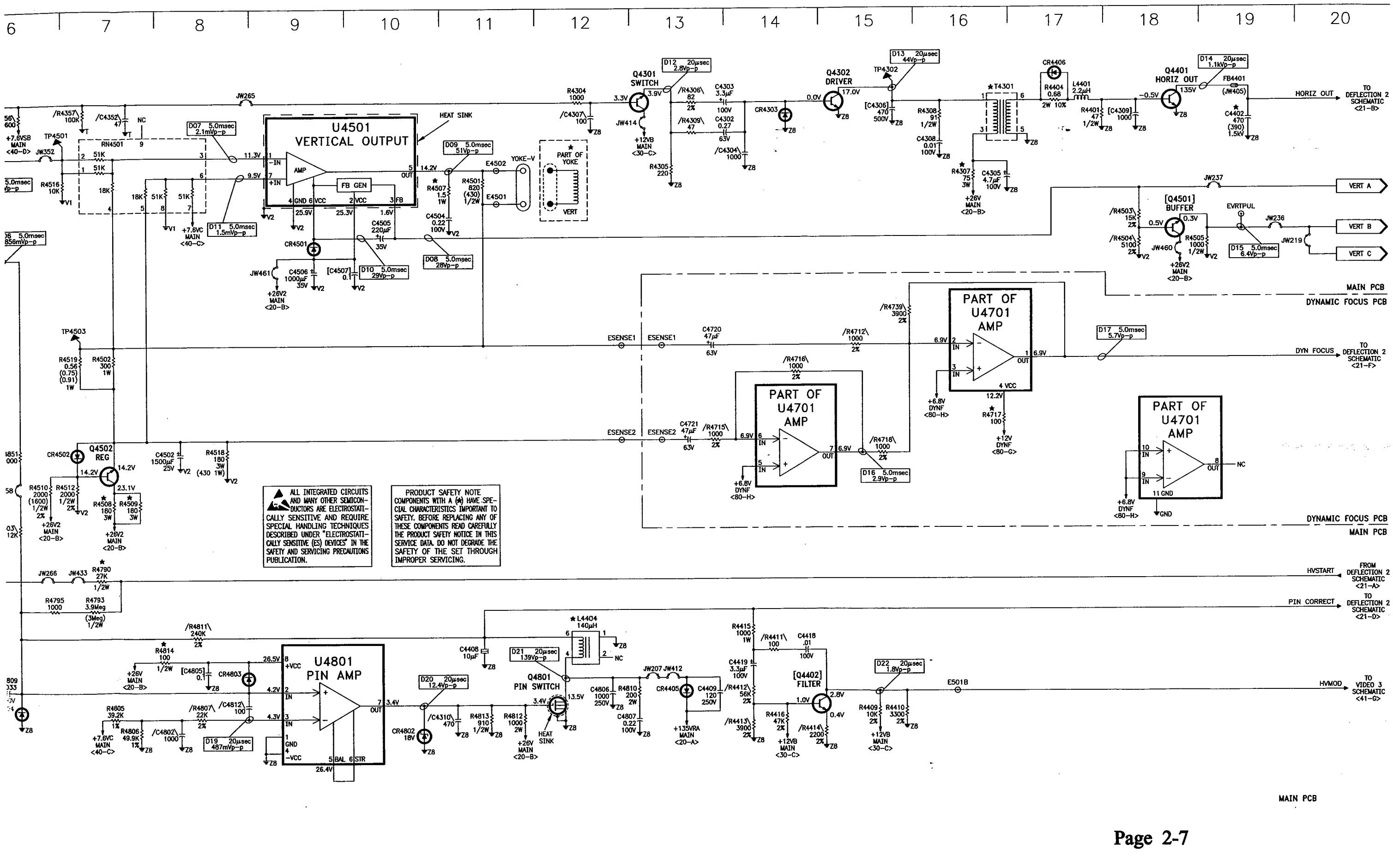
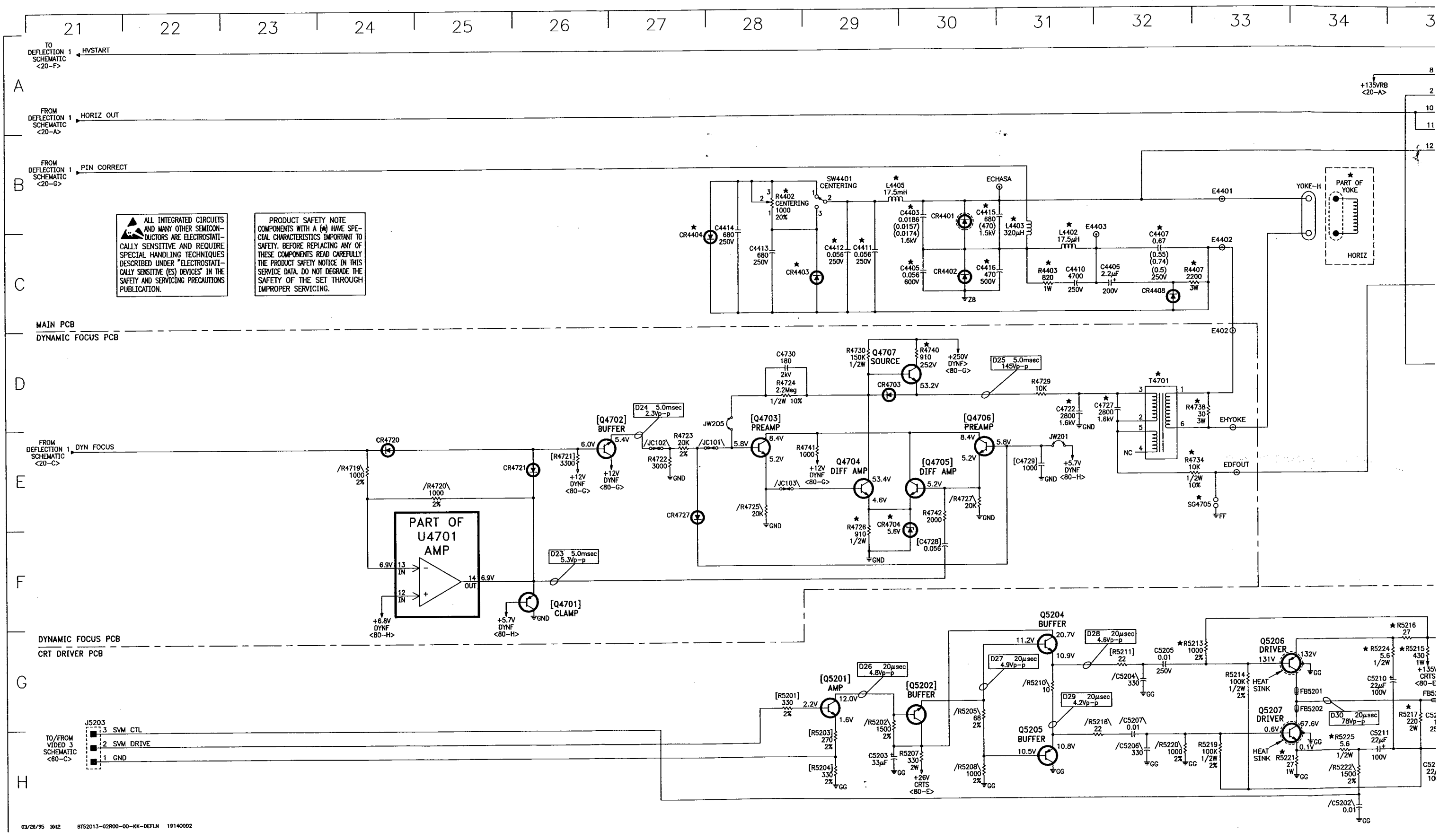
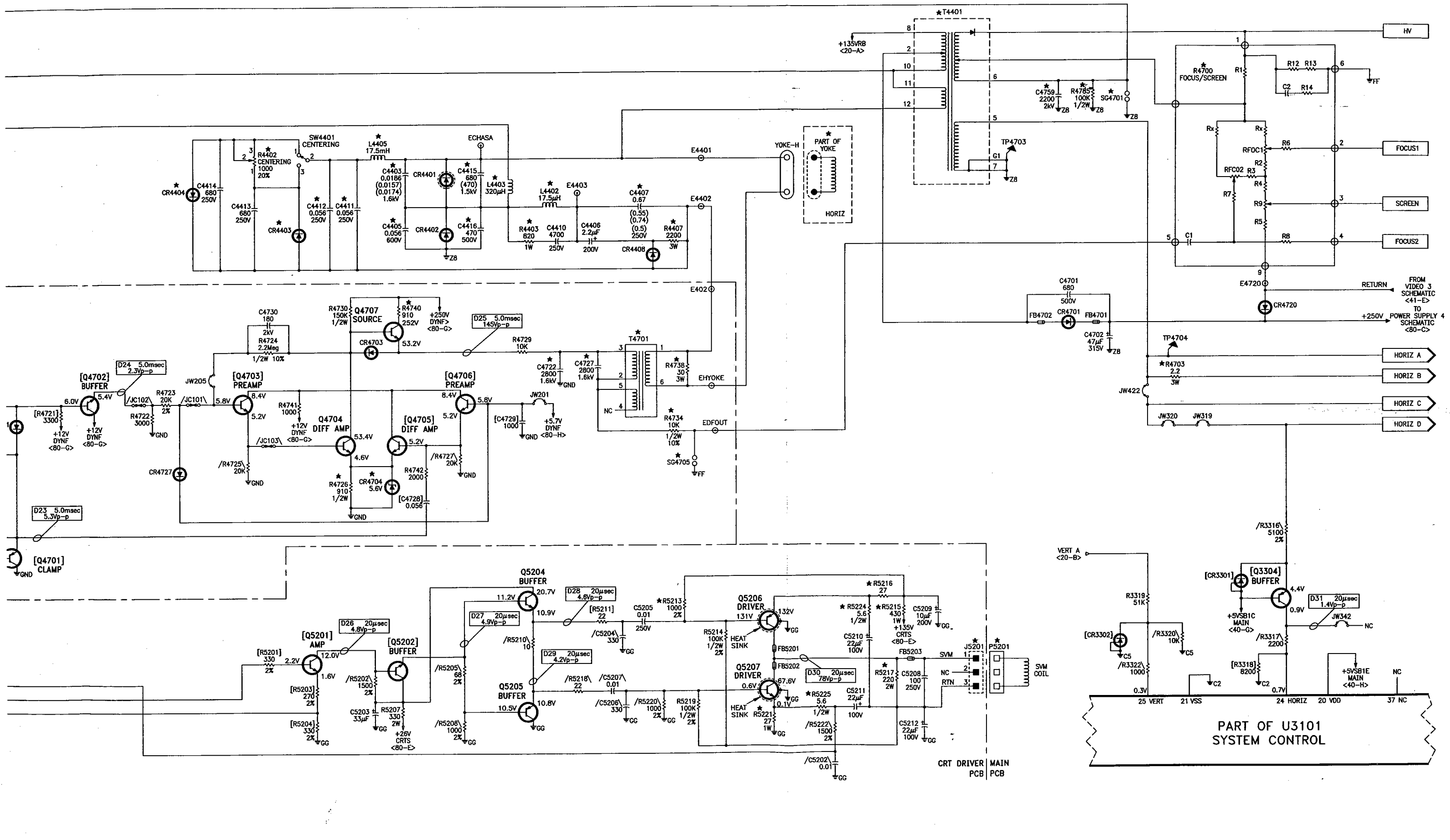


DEFLECTION SCHEMATIC (2 of 2)



DEFLECTION SCHEMATIC (2 of 2)

26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40



TUNER SCHEMATIC (1 of 2)

J801 ANT A
J802 ANT B
JW704
SW801
N.O.
N.C.
/R821\ 100K
/R822\ 100K
/C808\ 1000
T801
[JC709]
[C809] 68
L801
/JC701\
[JC708]
[JC704]
/C803\ 0.01
[JC705]
/R808\ 10 2%
/C807\ 1000
[Q2512] SWITCH
[Q802] BUFFER
[R807] 4700
/CR803\
0.7V(ANT A) 0.2V(ANT B)
0.0V(ANT A) 12.2V(ANT B)
12.2V(ANT A) 0.0V(ANT B)
/C805\ 1000
+12V2A MAIN <30-D>
R2583 1000
JW361
[JC302]
[JC301]
JW256
JW255

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/R2582\ 10K
+5VGA MAIN <40-F>
+5VGA MAIN <40-F>
4.7V(ANT B) 5.2V(ANT A)
A7 1 VDD 8 GND
PART OF U2502 D/A CONVERTER

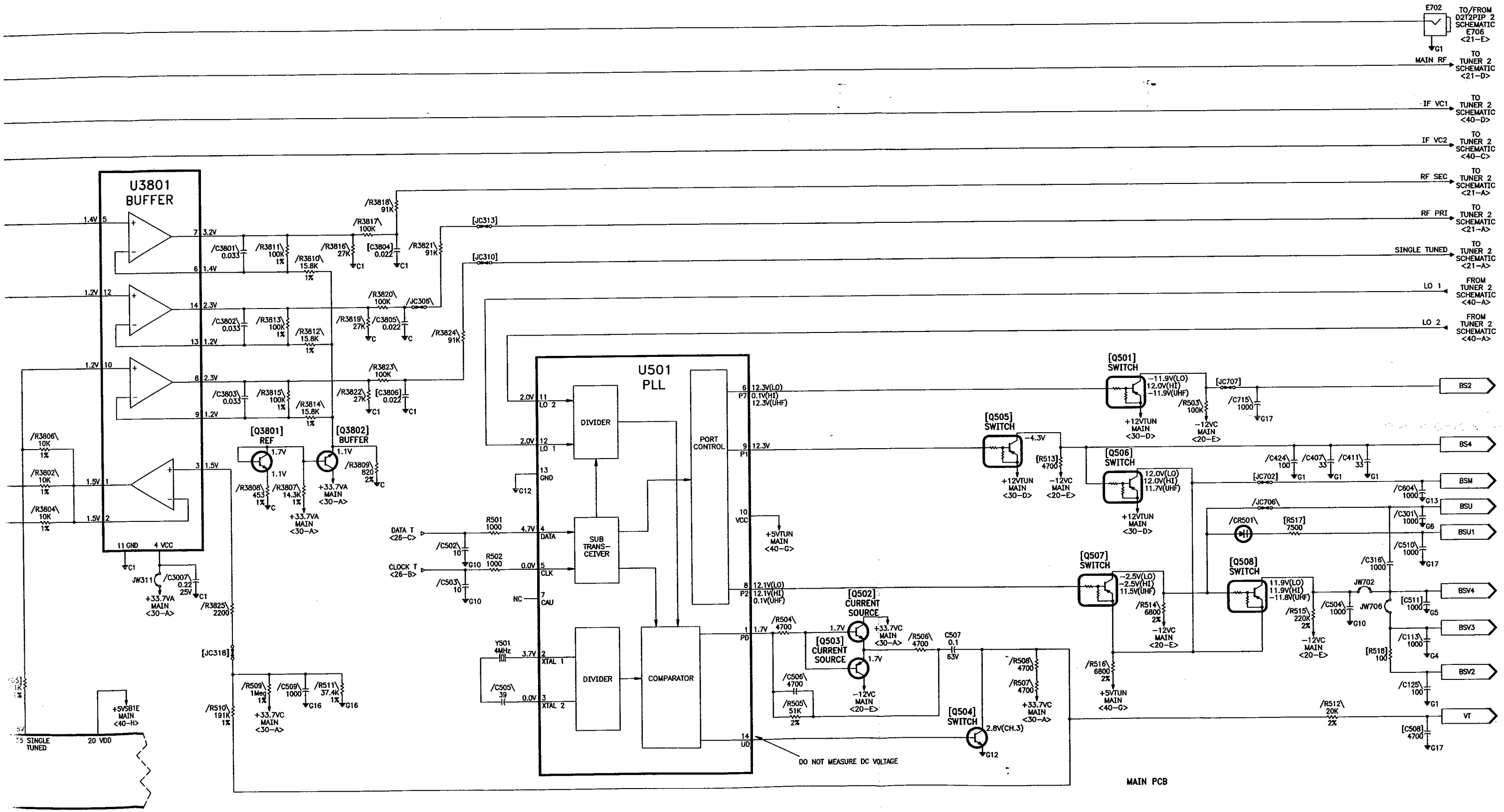
R3829 300K
R3827 300K
/C3809\ 0.022
/R3833\ 130K
/C3808\ 0.022
[R3832] 130K
/R3828\ 4700
/R3826\ 4700
+5VD MAIN <40-F>
+5VD MAIN <40-F>
/C3315\ 0.01
/R3342\ 750
/C3314\ 0.01
/R3341\ 750
[R3801] 26.1K 1%
[R3803] 26.1K 1%
[R3805] 26.1K 1%
+5SB1E MAIN <40-H>
21 VSS 33 IF VC1 32 IF VC2 34 RF SEC 36 RF PRI 35 SINGLE TUNED 20 VDD
PART OF U3101 SYSTEM CONTROL

U3801 BUFFER
/R3806\ 10K 1%
/R3802\ 10K 1%
/R3804\ 10K 1%
11 GND 4 VCC
JW311
/C3007\ 0.22 25V
+33.7VA MAIN <30-A>
/R3825\ 2200
[JC318]
/R509\ 1Meg 1%
/C509\ 1000
/R511\ 37.4K 1%
/R510\ 191K 1%
+33.7VC MAIN <30-A>
[Q3801] REF
[Q3802] BUFFER
/R3808\ 453 1%
/R3807\ 14.3K 1%
+33.7VA MAIN <30-A>
/R3809\ 820 2%
+33.7VA MAIN <30-A>
1.4V 5 / 7 3.2V / 6 1.4V
1.2V 12 / 14 2.3V / 13 1.2V
1.2V 10 / 8 2.3V / 9 1.2V
1.5V 3 / 1.5V 1 / 1.5V 2
/C3801\ 0.033
/R3811\ 100K 1%
/R3810\ 15.8K 1%
/C3802\ 0.033
/R3813\ 100K 1%
/R3812\ 15.8K 1%
/C3803\ 0.033
/R3815\ 100K 1%
/R3814\ 15.8K 1%
/R3818\ 91K
/R3817\ 100K
/R3816\ 27K
[C3804] 0.022
/R3821\ 91K
[JC313]
[JC310]
/R3820\ 100K
/JC306\
/R3819\ 27K
/C3805\ 0.022
/R3824\ 91K
/R3823\ 100K
/R3822\ 27K
[C3806] 0.022

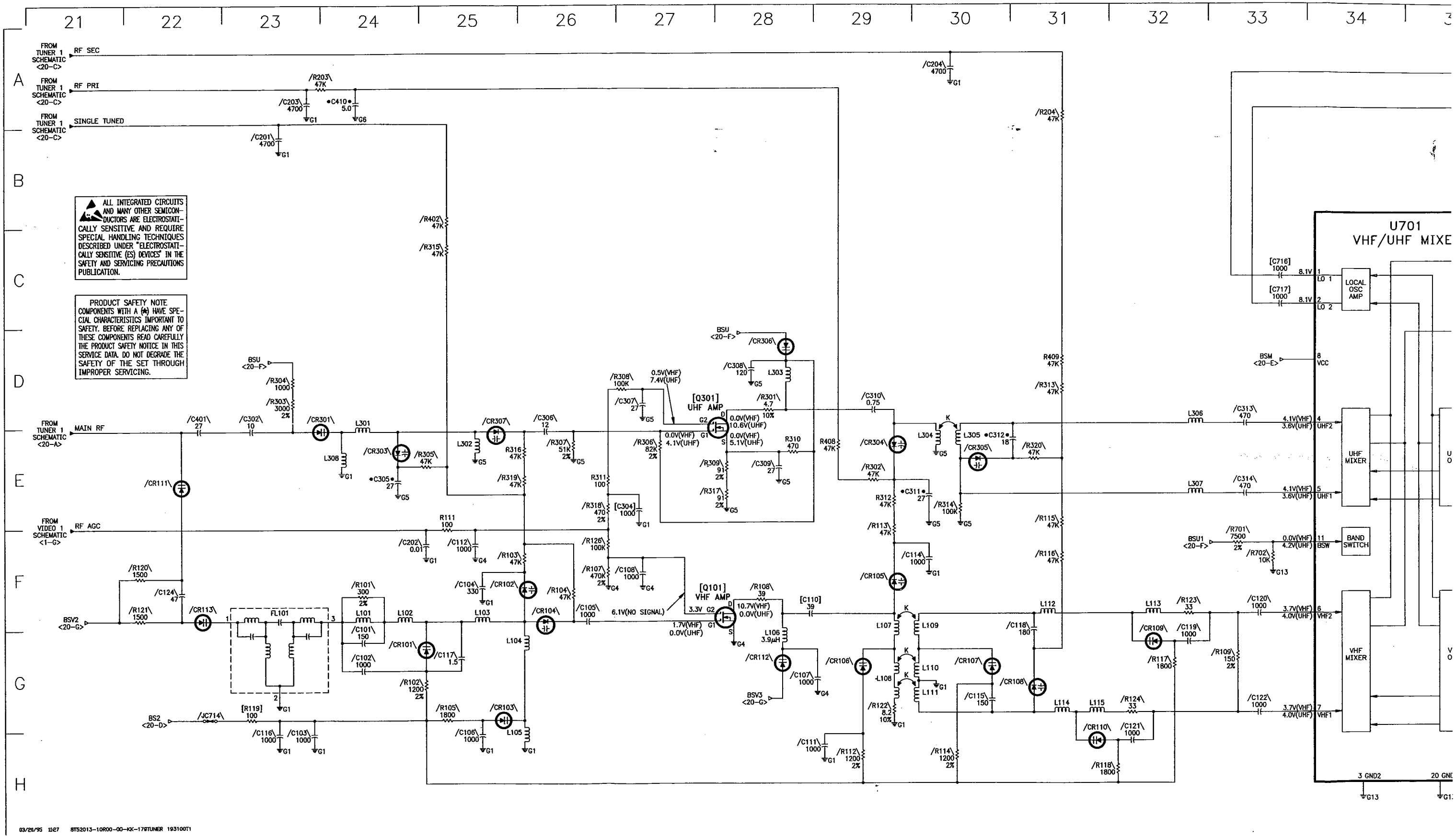
U501 PLL
DIVIDER
PORT CONTROL
SUB TRANS-CEIVER
DIVIDER
COMPARATOR
2.0V 11 LO 2
2.0V 12 LO 1
13 GND
DATA T <26-C>
CLOCK T <26-B>
R501 1000
/C502\ 10
R502 1000
/C503\ 10
4.7V 4 DATA
0.0V 5 CLK
NC 7 CAU
Y501 4MHz
/C505\ 39
3.7V 2 XTAL 1
0.0V 3 XTAL 2
6 12.3V(LO) P7 0.1V(HI) 12.3V(UHF)
9 12.3V P1
10 VCC
+5VTUN MAIN <40-G>
8 12.1V(LO) P2 12.1V(HI) 0.1V(UHF)
1 1.7V PD
14 UD
DO NOT MEASURE DC VOLTAGE
/R504\ 4700
[Q502] CURRENT SOURCE
+33.7VC MAIN <30-A>
[Q503] CURRENT SOURCE
1.7V
/R506\ 4700
C507 0.1 63V
/C506\ 4700
/R505\ 51K 2%
-12VC MAIN <20-E>
[Q504] SWITCH

TUNER SCHEMATIC (1 of 2)

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



TUNER SCHEMATIC (2 of 2)


21 22 23 24 25 26 27 28 29 30 31 32 33 34
A B C D E F G H
FROM TUNER 1 SCHEMATIC <20-C> RF SEC
FROM TUNER 1 SCHEMATIC <20-C> RF PRI
FROM TUNER 1 SCHEMATIC <20-C> SINGLE TUNED
FROM TUNER 1 SCHEMATIC <20-A> MAIN RF
FROM VIDEO 1 SCHEMATIC <1-G> RF AGC
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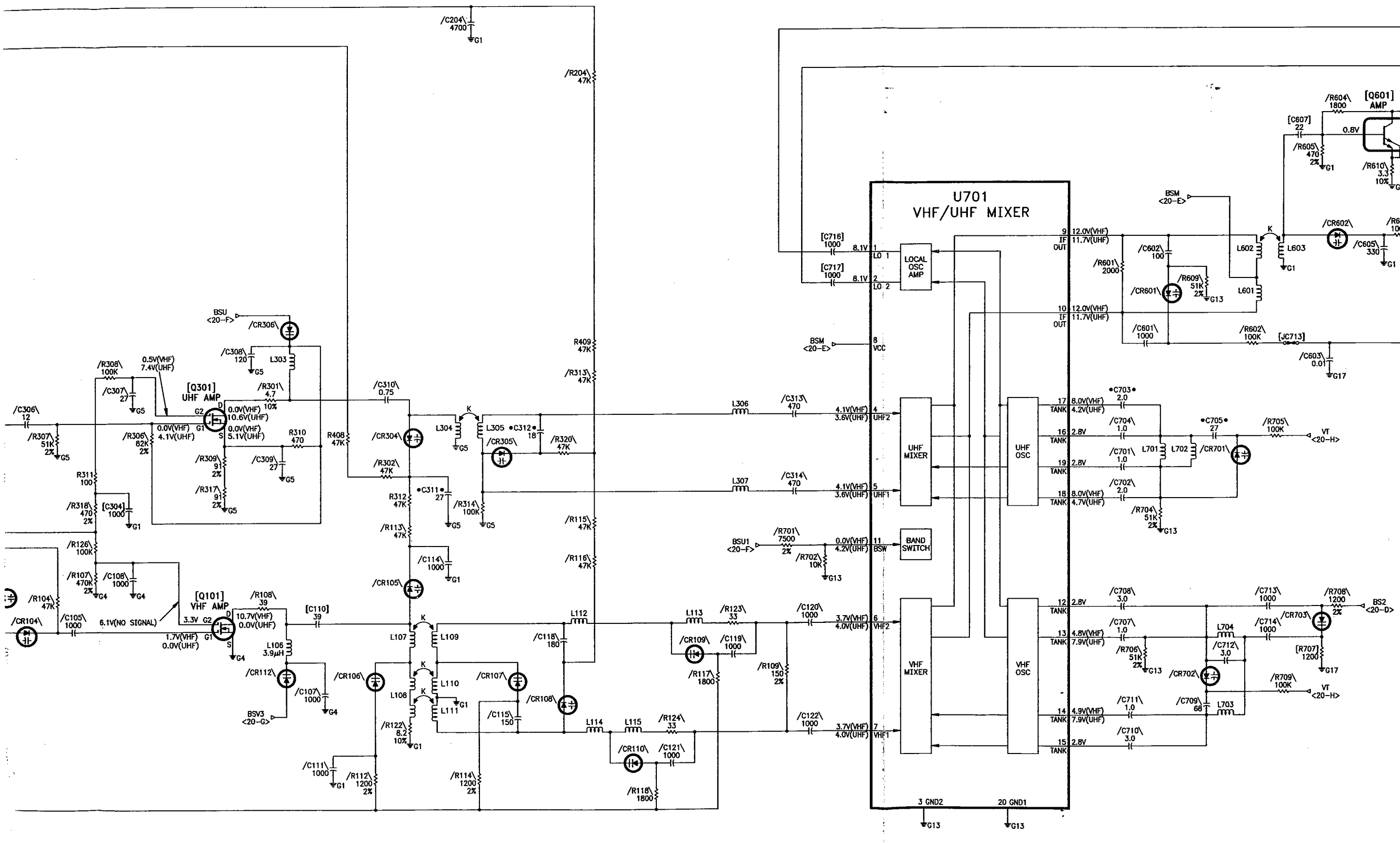
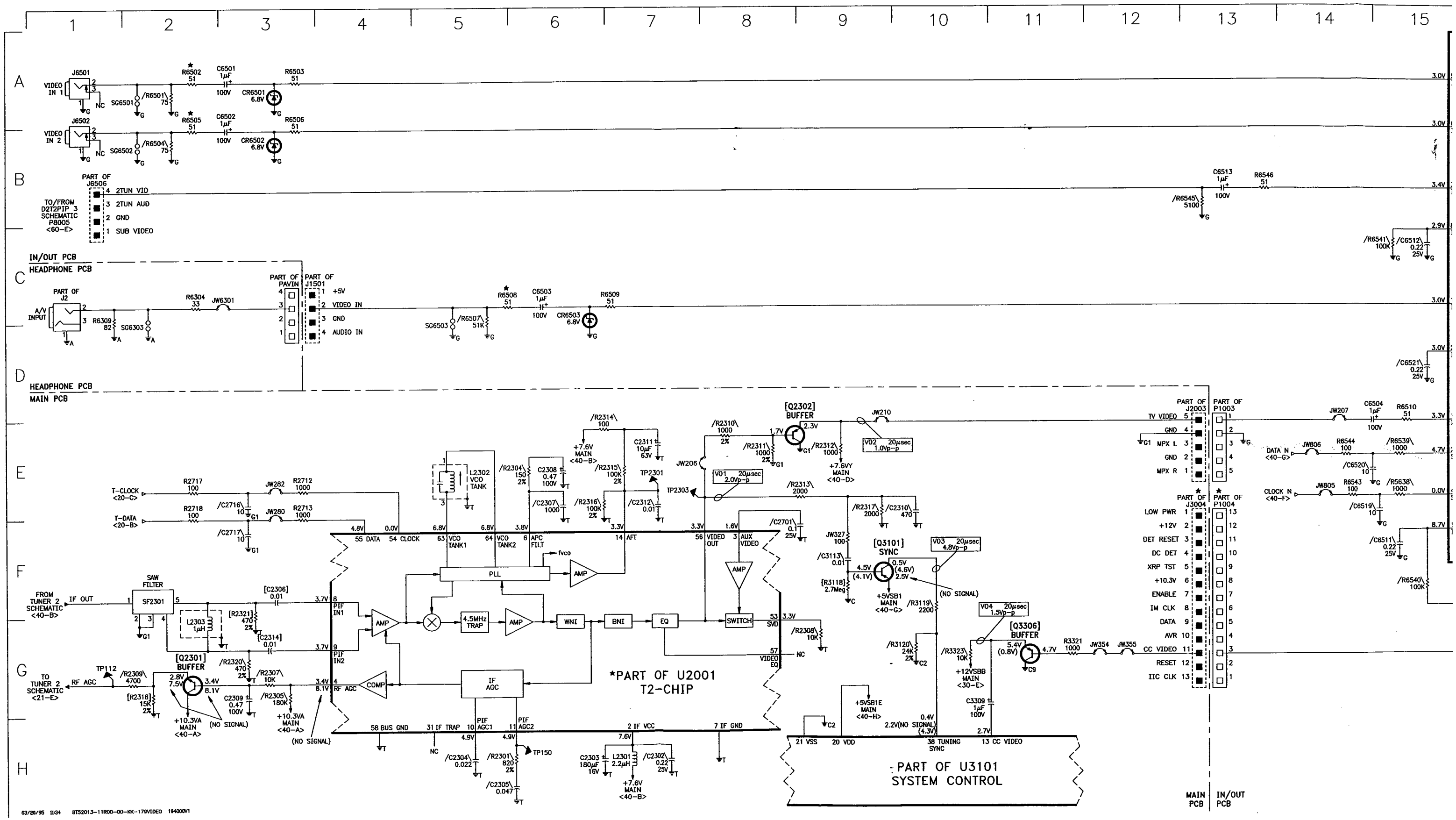
[Q301] UHF AMP
[Q101] VHF AMP
U701 VHF/UHF MIXE
LOCAL OSC AMP
UHF MIXER
VHF MIXER
BAND SWITCH
BSV2 <20-G>
BSV3 <20-G>
BSU <20-F>
BSU1 <20-F>
BS2 <20-D>
BSM <20-E>
0.5V(VHF) 7.4V(UHF)
0.0V(VHF) 10.6V(UHF)
0.0V(VHF) 4.1V(UHF)
0.0V(VHF) 5.1V(UHF)
10.7V(VHF) 0.0V(UHF)
3.3V
6.1V(NO SIGNAL)
1.7V(VHF) 0.0V(UHF)
4.1V(VHF) 3.6V(UHF)
3.7V(VHF) 4.0V(UHF)
0.0V(VHF) 4.2V(UHF)
8.1V
3 GND2
20 GND
03/28/95 11:27 8T52013-10R00-00-KK-179TUNER 193100T1

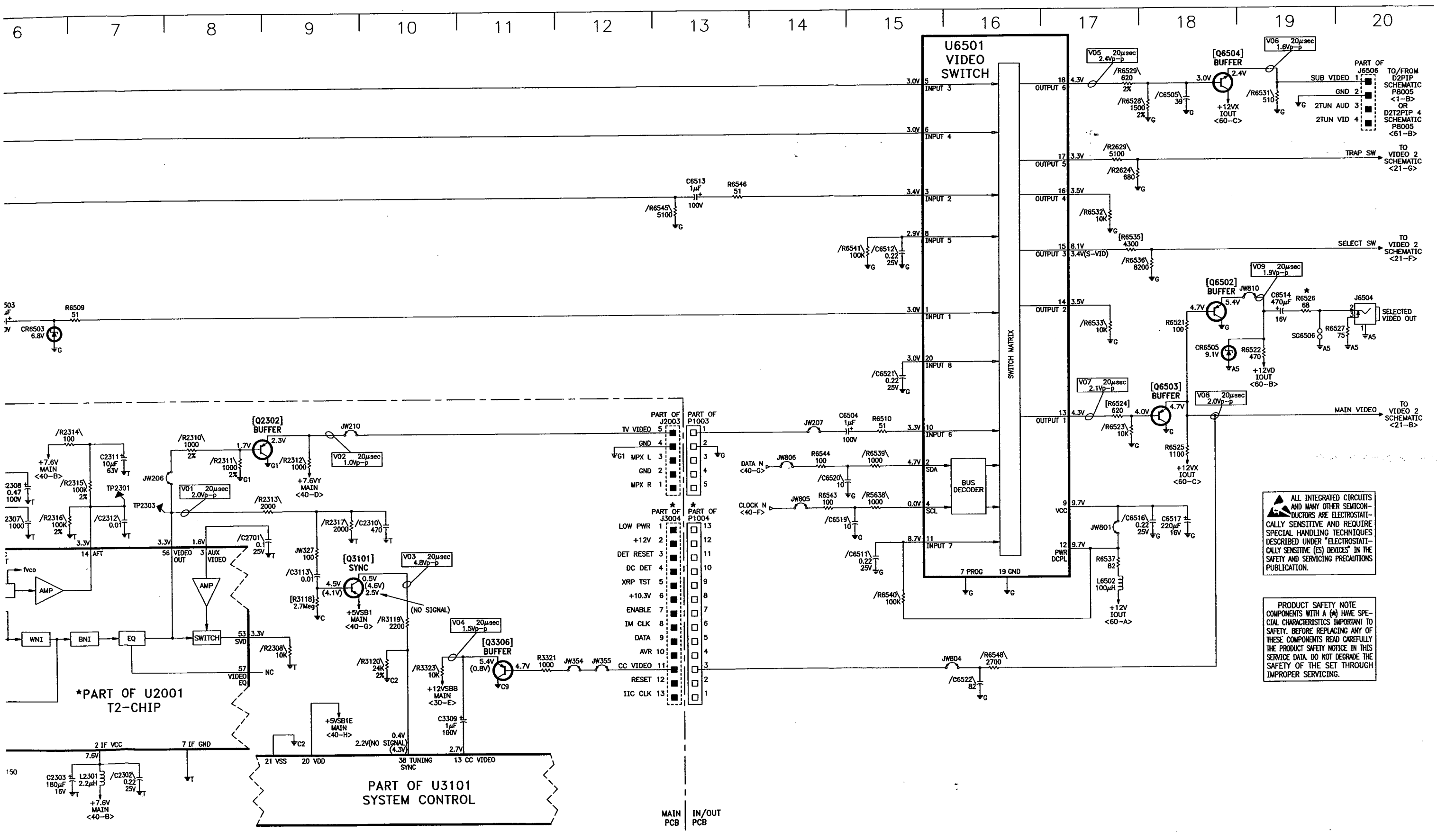
TUNER SCHEMATIC (2 of 2)

26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40



VIDEO SCHEMATIC (1 of 5)




6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
U6501
VIDEO
SWITCH
SWITCH MATRIX
BUS DECODER
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
INPUT 6
INPUT 7
INPUT 8
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
OUTPUT 6
7 PROG
19 GND
[Q6504] BUFFER
[Q6502] BUFFER
[Q6503] BUFFER
[Q2302] BUFFER
[Q3101] SYNC
[Q3306] BUFFER
SUB VIDEO
GND
2TUN AUD
2TUN VID
TRAP SW
SELECT SW
SELECTED VIDEO OUT
MAIN VIDEO
TO VIDEO 2 SCHEMATIC <21-B>
TO VIDEO 2 SCHEMATIC <21-F>
TO VIDEO 2 SCHEMATIC <21-G>
TO/FROM D2PIP SCHEMATIC P8005 <1-B> OR D2T2PIP 4 SCHEMATIC P8005 <61-B>
PART OF J6506
PART OF J2003
PART OF P1003
PART OF J3004
PART OF P1004
TV VIDEO
MPX L
MPX R
LOW PWR
+12V
DET RESET
DC DET
XRP TST
+10.3V
ENABLE
IM CLK
DATA
AVR
CC VIDEO
RESET
IIC CLK
DATA N
CLOCK N
SDA
SCL
VCC
PWR DCPL
+12VX IOUT <60-C>
+12VD IOUT <60-B>
+12V IOUT <60-A>
+5VSB1 MAIN <40-G>
+5VSB1E MAIN <40-H>
+12VSBB MAIN <30-E>
+7.6V MAIN <40-B>
+7.6VY MAIN <40-D>
*PART OF U2001 T2-CHIP
PART OF U3101 SYSTEM CONTROL
WNI
BNI
EQ
SWITCH
AMP
AFT
VIDEO OUT
AUX VIDEO
SVD
VIDEO EQ
NC
IF VCC
IF GND
VSS
VDD
TUNING SYNC
CC VIDEO
MAIN PCB
IN/OUT PCB
V01 20µsec 2.0Vp-p
V02 20µsec 1.0Vp-p
V03 20µsec 4.8Vp-p
V04 20µsec 1.5Vp-p
V05 20µsec 2.4Vp-p
V06 20µsec 1.6Vp-p
V07 20µsec 2.1Vp-p
V08 20µsec 2.0Vp-p
V09 20µsec 1.9Vp-p
(NO SIGNAL)
2.2V(NO SIGNAL) (4.3V)
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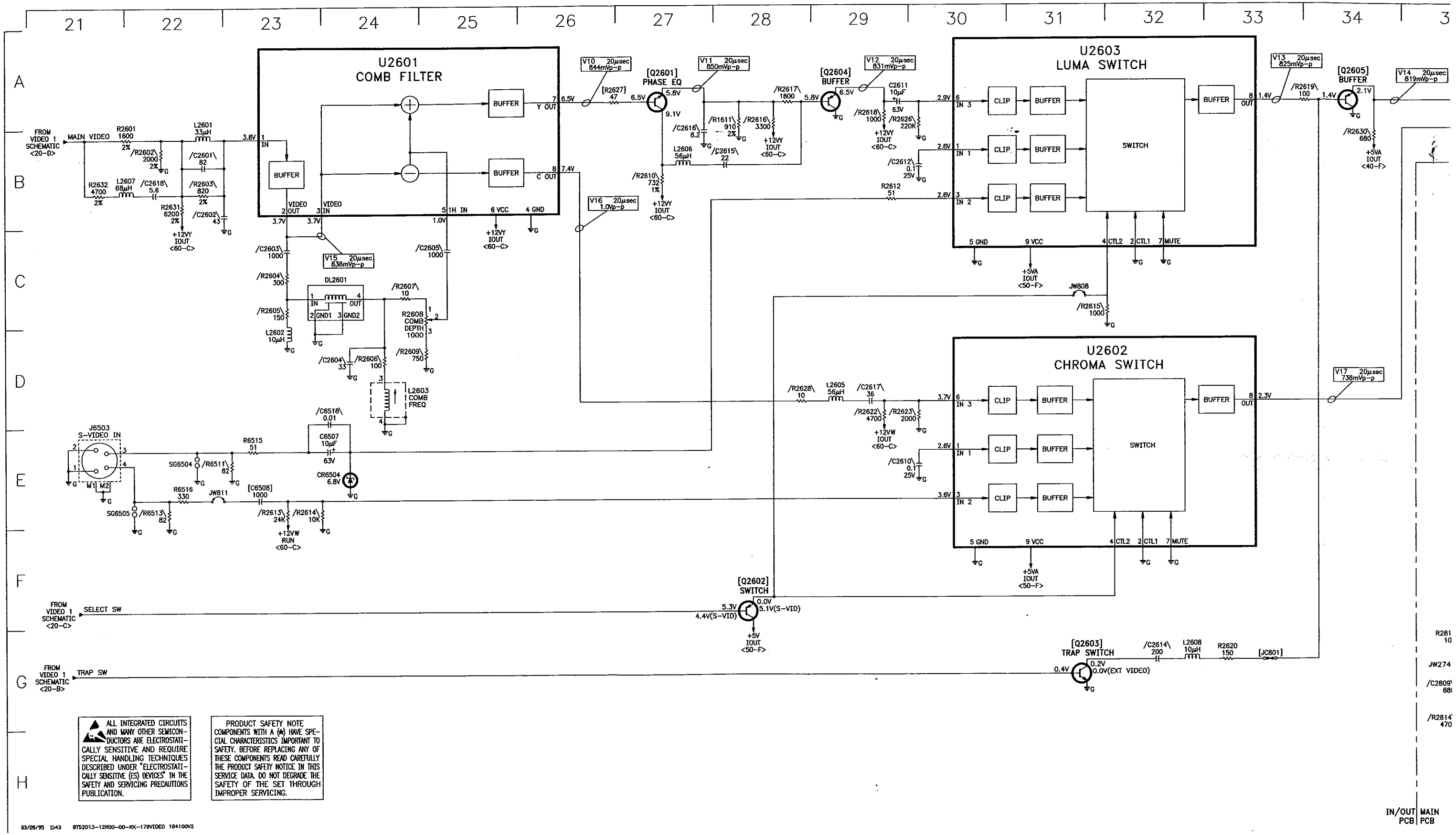
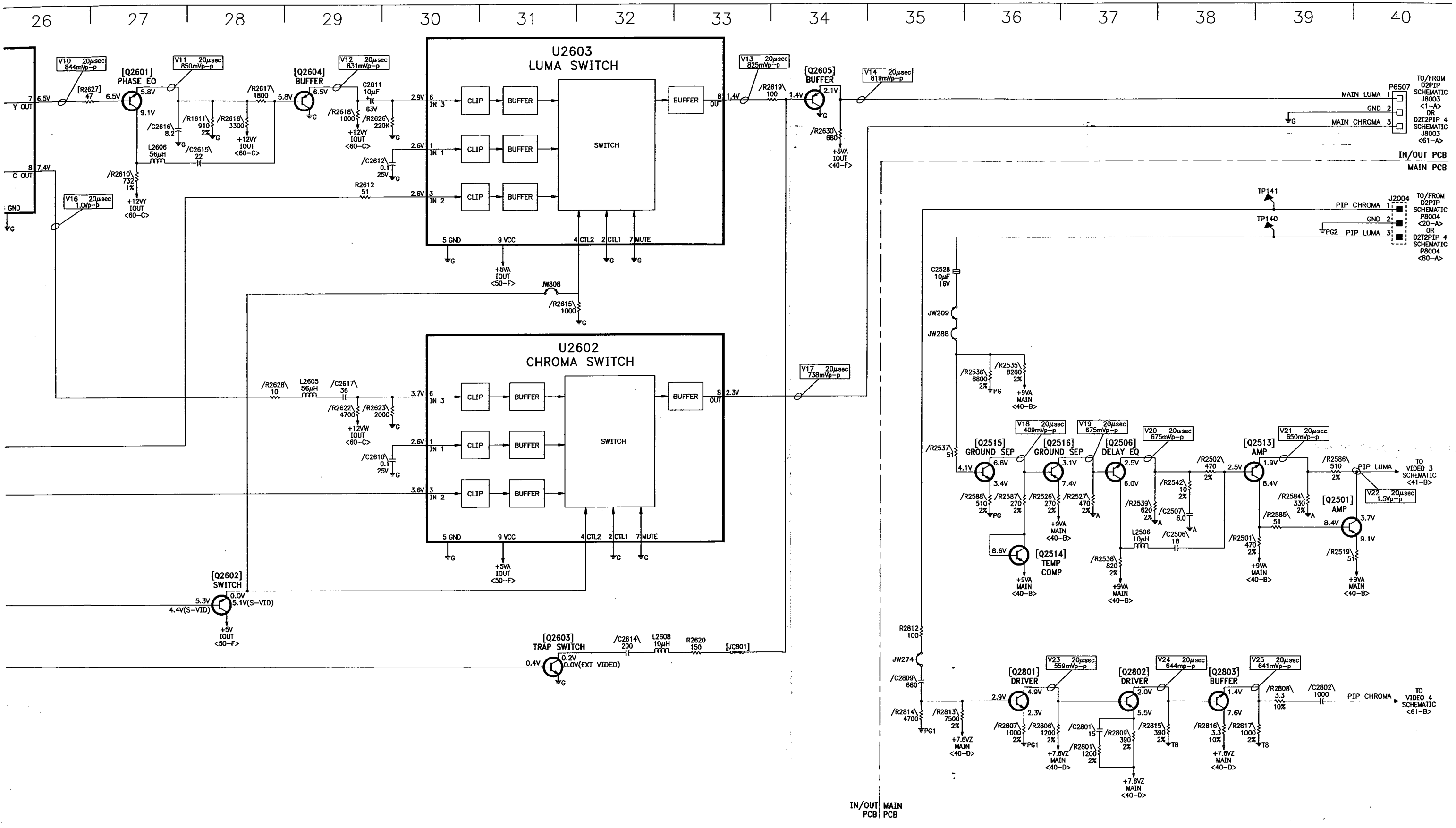
VIDEO SCHEMATIC (2 of 5)



VIDEO SCHEMATIC (2 of 5)



VIDEO SCHEMATIC (3 of 5)

41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

A B C D E F G H

[Q2502] SWITCH
V27 5.0msec 2.2Vp-p
VERT B <20-C>
/C2510 0.01
/R2553 12K
/R2554 12K
/C2511 4700
/R2504 220 2%
/R2505 6200 2%
/R2506 1800 2%
+9VB MAIN <40-B>
2.1V
0.0V

[Q2511] BUFFER
V26 20µsec 1.5Vp-p
FROM VIDEO 2 SCHEMATIC <40-E>
PIP LUMA 3.8V
/JC205
4.5V
0.3V
/R2558 51
/R2511 1000
/R2503 1000
/C2503 220
JW203
/C2504 0.01
C2505 10µF 63V
5.4V
2.8V
L2507 68µH
L2502 82µH
/C2516 27
+9VA MAIN <40-B>

ADAPTIVE NOISE REDUCTION
DELAY
DELAY
DYNAMIC SHARPNESS CORRECTION CONTROL
GAIN CONTROL
CORING
GAIN CONTROL
EDGE SWITCHING
GAIN CONTROL
GAIN CONTROL

U2501
LUMA PROCESSOR

13 YM PEAKING
25 YIN
2 DSC IN
4 DET FIL
NC
27 VCC
+9VA MAIN <40-B>
30 DSC S GAIN ADJ 3.9V
29 DSC BIAS 0.7V
5 DSC GAIN CONTROL 4.6V
3 DSC OUT 2.9V
1 GND1 6.4V
19 DIFF1 OUT1 5.0V
17 DIFF1 IN1 4.7V(NR ON) 3.5V(NR OFF)
18 Y DET 5.8V
28 CORING BIAS 4.8V(NR ON) 3.3V(NR OFF)
12 SEP LEVEL ADJ 1.8V(NR ON) 4.7V(NR OFF)
26 CORING ADJ 3.2V
6 DIFF BIAS1 3.2V
8 DIFF BIAS2 3.0V
7 NOISE RED BIAS
24 DELAY SEL1 2.9V
9 DIFF1 OUT2 2.7V
11 DIFF2 IN 3.6V
10 BIAS APER 2.3V~3.3V
16 SHARP CONTROL
14 YVM OUT 4.0V

/R2572 5100 2% +9VA MAIN <40-B>
/R2573 3600 2%
/R2508 3900
/R2507 47K
+9VA MAIN <40-B>
/R2509 5100 2%
/R2510 5100 2%
+9VB MAIN <40-B>
/R2522 68K
/C2517 4700
/R2520 7500 2%
/R2521 3900 2%
+9VB MAIN <40-B>
V28 20µsec 213mVp-p
/C2518 0.01
/R2523 560 2%
/R2525 680 2%
/R2524 270 2%
/C2520 10
/C2519 10
L2504 82µH
/R2595 1000 2%
/R2567 6200 2%
+9V MAIN <40-B>
/R2534 6800 2%
R2568 8200
/C2508 0.1 25V
/R2570 5100 2%
+9VB MAIN <40-B>
/R2571 5100 2%
/R2544 7500 2%
/C2538 0.01
/R2562 20K 2%
/R2545 8200 2%
/C2523 0.01
/C2514 0.01
/R2561 27K 2%
+9VA MAIN <40-B>
NC NC
/R2524 0.01
/C2534 0.22 25V
/C2525 0.22 25V
/R2531 910K
/R2528 6800 2%
+9VB MAIN <40-B>
/R2529 1000
/C2521 0.01
/C2527 0.01
/R2522 220
/R2530 1000
L2505 10µH
/C2513 0.1 25V
V29 20µsec 706mVp-p
V31 20µsec 1.8Vp-p
[Q2517] DELAY EQ
4.5V
3.9V
6.6V
/R2592 820 2%
JW212
/C2539 12
[R2591] 470 2%
/JC202
/R2590 330 2% +9V MAIN <40-B>

14 A5 11 A2 9 A0 12 A3 10 A1
1 VDD
+5VGA MAIN <40-F>
7 ADDR2N
8 GND
A3
PART OF U2502
D/A CONVERTER
3 DATA IN
2 DATA OUT 4.7V
4 CLOCK 0.0V
5 RESET 5.4V
13 A4
15 A6 4.2V
6 ADDR3N 5.2V

DATA C <26-C>
R2557 100
[R2563] 1000 2%
/C2535 10
CLOCK A <26-A>
R2556 100
/R2564 1000
/C2536 10
RESET A <26-D>
JW222
/R2574 100
/R2578 1000
/C2533 1000
/R2579 1000
+5VG MAIN <40-F>

/R2543 51K 2%
/R2548 7500 2%
/R2547 22K 2%
+9V MAIN <40-B>
C2512 10µF 63V
[R2546] 27K 2%
JW213
JW283
[R2549] 33K 2%
/R2550 10K 2%
+9V MAIN <40-B>
C2509 10µF 63V
1.0V~7.3V
[Q2507] SVM LEVEL
/R2552 15K 2%
/R2551 10K
+9VA MAIN <40-B>
/R3330 1000 2%
/C3311 100
C4
[Q2518] SVM LEVEL
1.6V~3.6V
0.0V~3.2V
R2593 3900
2.6V~3.0V
/C2541 300
/R2596 6800 (15K) 2%
V36 50µsec 7.0Vp-p
0.0V~7.3V
/C3307 15
R3325 4300
/R3326 220
C5 +5VSB1C MAIN <40-G>
+5VSB1E MAIN <40-H>
C2
21 VSS 20 VDD 30 EDGE SHARPNESS
PART OF U3101
SYSTEM CONTROL

[Q2508] AMP
V30 20µsec 1.9Vp-p
/R2580 27K 2% +9VB MAIN <40-B>
JW211
1.2V
4.6V
0.6V
JW291
DL2501
1A IN 3A OUT 2A
[R2581] 4300
/R2517 120 2%
R2515 680 2% +9VA MAIN <40-B>
/R2516 1000 2%

TO DEFLECTION 2 SCHEMATIC <40-D>
RETURN
R4720 2200
FROM VIDEO 5 SCHEMATIC <81-A>
AKB SENSE
R4721 2200
CR4721
Q4720 SCREEN REG
3.0V 14.4V 3.4V
CR4723
/C4722 1500
CR4722
/R4736 330
R4735 3.3Meg
C4732 180µF 16V
/R4724 150K 2%
R4725 390K 2%
+12VB MAIN <30-C>
C4720 0.15 400V
R4722 2Meg
R4737 2.2Meg
10.5V
[Q4721] SCREEN REG
0.9V 11.4V
/R4723 330K 2%
R4726 5100 2%
/R4727 5100 2%
+12VB MAIN <30-C>
/R4728 10K 2%
[Q4722] SCREEN REG
0.4V 1.4V
/R4731 1000 2%
R4730 7500 2%
/R4729 5100 2%
+12VB MAIN <30-C>
/R4732 330 0.4V
[Q4723] SCREEN REG
5.3V
/R4733 330
/JC222
JW267
/R2577 51
/R2575 1000
5.2V
/C4721 0.33
/R2576 3000 2%
+5VGA MAIN <40-F>

FROM DEFLECTION 1 SCHEMATIC <20-G>
HVMOD
E501A

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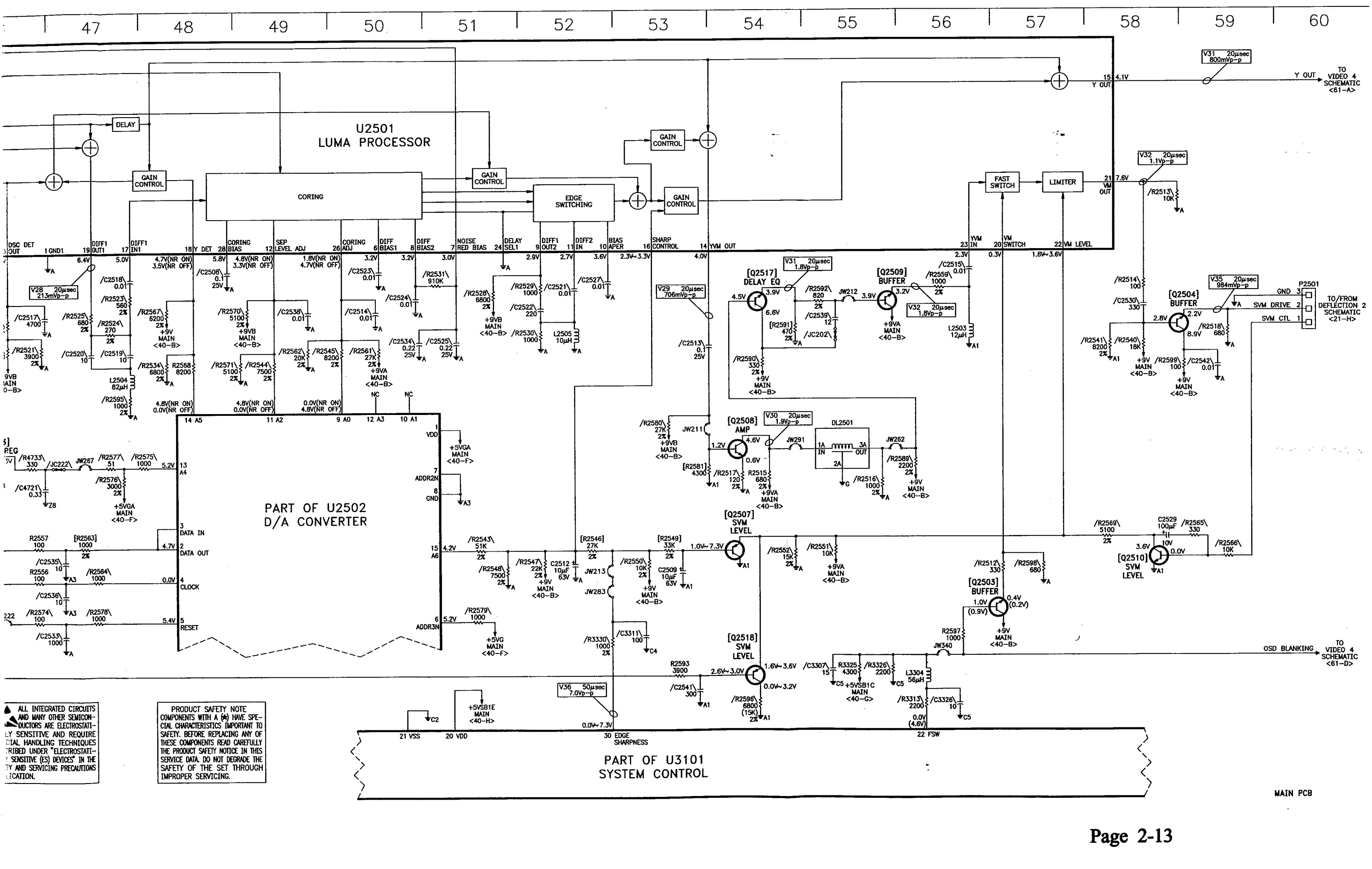
03/20/95 11:51 8T52013-13R00-00-KK-179VIDEO 194200V3

VIDEO SCHEMATIC (3 of 5)



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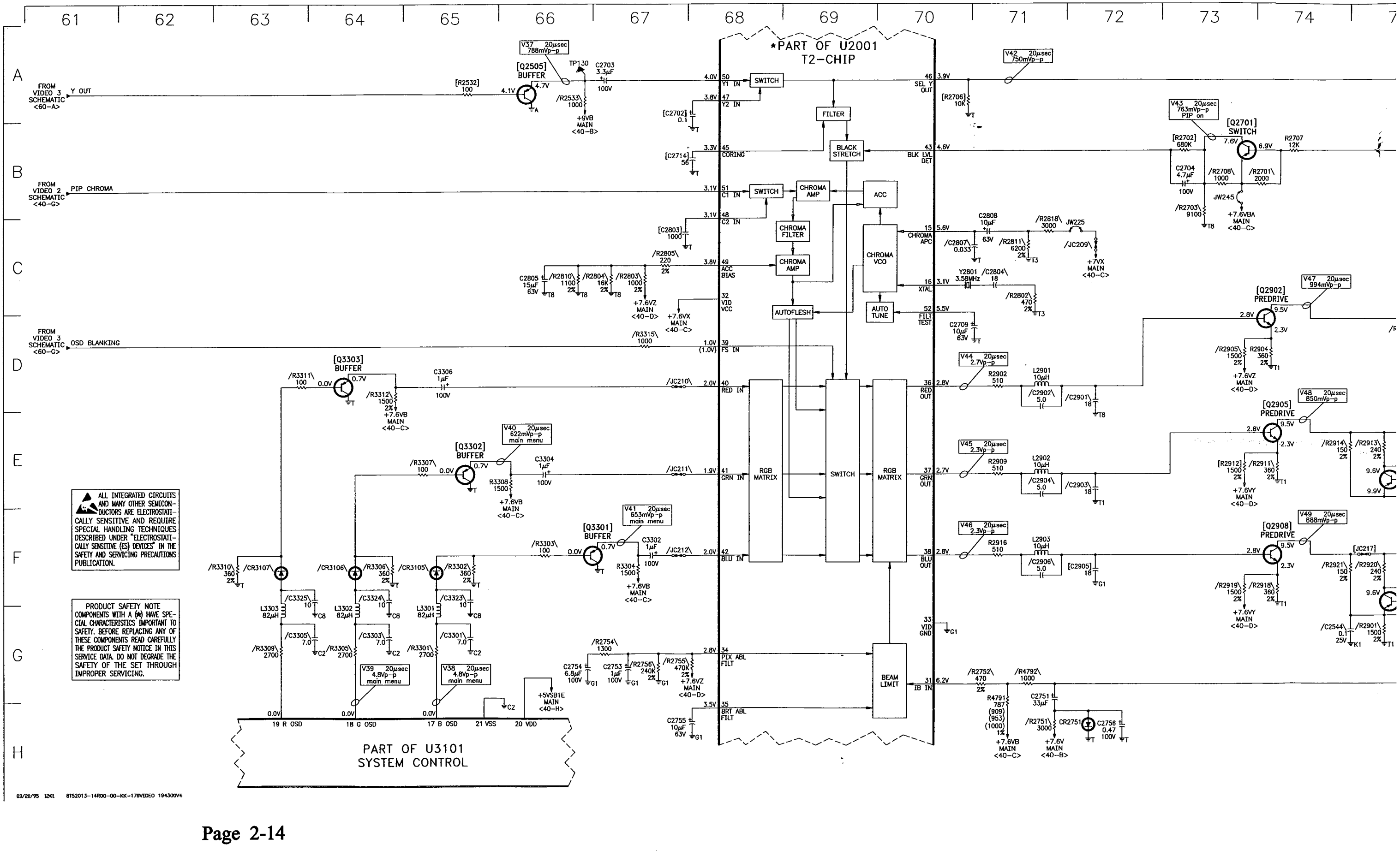
VIDEO SCHEMATIC (4 of 5)


61 62 63 64 65 66 67 68 69 70 71 72 73 74
A B C D E F G H
*PART OF U2001
T2-CHIP
FROM VIDEO 3 SCHEMATIC <60-A> Y OUT
FROM VIDEO 2 SCHEMATIC <40-G> PIP CHROMA
FROM VIDEO 3 SCHEMATIC <60-G> OSD BLANKING
[Q2505] BUFFER
[Q3303] BUFFER
[Q3302] BUFFER
[Q3301] BUFFER
SWITCH
FILTER
BLACK STRETCH
CHROMA AMP
CHROMA FILTER
CHROMA VCO
ACC
AUTO TUNE
AUTOFLESH
RGB MATRIX
SWITCH
BEAM LIMIT
[Q2701] SWITCH
[Q2902] PREDRIVE
[Q2905] PREDRIVE
[Q2908] PREDRIVE
PART OF U3101
SYSTEM CONTROL
19 R OSD
18 G OSD
17 B OSD
21 VSS
20 VDD
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03/20/95 1241 8TS2013-14R00-00-KK-179VIDEO 194300V4

VIDEO SCHEMATIC (4 of 5)

66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

*PART OF U2001
T2-CHIP

V37 20µsec 788mVp-p
[Q2505] BUFFER
4.7V
TP130
C2703 3.3µF 100V
/R2533\ 1000
+9VB MAIN <40-B>

4.0V 50 Y1 IN
3.8V 47 Y2 IN
3.3V 45 CORING
3.1V 51 C1 IN
3.1V 48 C2 IN
3.8V 49 ACC BIAS
32 VID VCC
1.0V (1.0V) 39 FS IN
2.0V 40 RED IN
1.9V 41 GRN IN
0.0V 42 BLU IN

SWITCH
FILTER
BLACK STRETCH
CHROMA AMP
CHROMA FILTER
CHROMA AMP
AUTOFLESH
ACC
CHROMA VCO
AUTO TUNE
RGB MATRIX
SWITCH
RGB MATRIX

[C2702] 0.1
[C2714] 56
[C2803] 1000
/R2805\ 220 2%
C2805 15µF 63V
/R2810\ 1100 2%
/R2804\ 16K 2%
/R2803\ 1000 2%
+7.6VZ MAIN <40-D>
+7.6VX MAIN <40-C>
/R3315\ 1000
/JC210\
C3304 1µF 100V
/JC211\
V41 20µsec 653mVp-p main menu
[Q3301] BUFFER
0.7V
C3302 1µF 100V
/JC212\
/R3303\ 100
R3304 1500
+7.6VB MAIN <40-C>

43 4.6V BLK LVL DET
46 3.9V SEL Y OUT
15 5.6V CHROMA APC
16 3.1V XTAL
52 5.5V FILT TEST
36 2.8V RED OUT
37 2.7V GRN OUT
38 2.8V BLU OUT
33 VID GND
34 2.8V PIX ABL FILT
35 3.5V BRT ABL FILT
31 6.2V IB IN

V42 20µsec 750mVp-p
[R2706] 10K
V43 20µsec 763mVp-p PIP on
[Q2701] SWITCH
7.6V
6.9V
R2707 12K
[R2702] 680K
C2704 4.7µF 100V
/R2708\ 1000
/R2701\ 2000
JW245
/R2703\ 9100
+7.6VBA MAIN <40-C>
C2808 10µF 63V
/C2807\ 0.033
/R2811\ 6200 2%
/R2818\ 3000
JW225
/JC209\
+7VX MAIN <40-C>
Y2801 3.58MHz
/C2804\ 18
/R2802\ 470 2%
C2709 10µF 63V
V44 20µsec 2.7Vp-p
R2902 510
L2901 10µH
/C2902\ 5.0
/C2901\ 18
V45 20µsec 2.3Vp-p
R2909 510
L2902 10µH
/C2904\ 5.0
/C2903\ 18
V46 20µsec 2.3Vp-p
R2916 510
L2903 10µH
/C2906\ 5.0
[C2905] 18
/R2754\ 1300
C2754 6.8µF 100V
C2753 1µF 100V
/R2756\ 240K 2%
/R2755\ 470K 2%
+7.6VZ MAIN <40-D>
C2755 10µF 63V
+5VSB1E MAIN <40-H>
VDD
/R2752\ 470 2%
/R4792\ 1000
R4791 787 (909) (953) (1000) 1%
+7.6VB MAIN <40-C>
C2751 33µF
/R2751\ 3000
CR2751
C2756 0.47 100V
+7.6V MAIN <40-B>

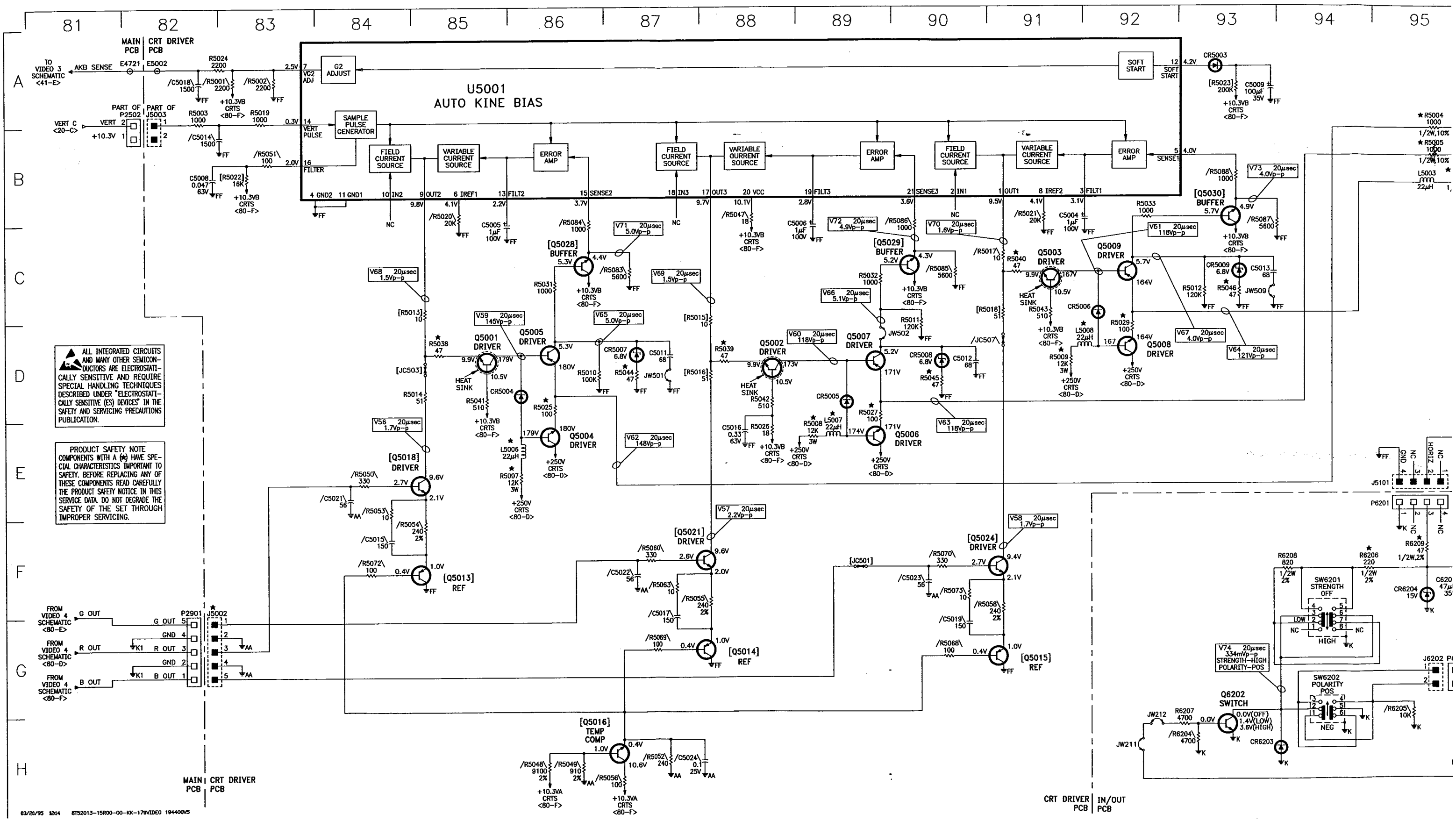
V47 20µsec 994mVp-p
[Q2902] PREDRIVE
2.6V
9.5V
2.3V
/R2905\ 1500 2%
R2904 360 2%
+7.6VZ MAIN <40-D>
V48 20µsec 850mVp-p
[Q2905] PREDRIVE
2.8V
9.5V
2.3V
[R2912] 1500 2%
/R2911\ 360 2%
+7.6VY MAIN <40-D>
V49 20µsec 888mVp-p
[Q2908] PREDRIVE
2.8V
9.5V
2.3V
/R2919\ 1500 2%
/R2918\ 360 2%
+7.6VY MAIN <40-D>
[JC217]
/R2921\ 150 2%
/R2920\ 240 2%
9.6V
[Q2910] GAMMA
/C2544\ 0.1 25V
/R2901\ 1500 2%
9.9V
[Q2901] TEMP COMP
+10.3VA MAIN <40-A>
/R2914\ 150 2%
/R2913\ 240 2%
9.6V
[Q2907] GAMMA
9.9V
/R2907\ 150 2%
/R2906\ 240 2%
9.6V
[Q2904] GAMMA
9.9V

V50 20µsec 3.7Vp-p
[Q2903] PREDRIVE
9.5
10.2V
[R2908] 220 2%
/R2926\ 910 2%
+10.3VA MAIN <40-A>
[Q2912] BUFFER
1.9V
2.6V
/K1
/R2928\ 100
/R2927\ 1500 2%
+10.3VA MAIN <40-A>
V51 20µsec 3.2Vp-p
[Q2906] PREDRIVE
9.5V
10.2V
[R2915] 220 2%
/R2929\ 910 2%
+10.3VA MAIN <40-A>
[Q2913] BUFFER
1.9V
2.6V
/K1
/JC226\
[R2930] 1500 2%
+10.3VA MAIN <40-A>
/R2931\ 100
V52 20µsec 3.2Vp-p
[Q2909] PREDRIVE
9.5V
10.2V
/R2922\ 220 2%
/R2932\ 910 2%
+10.3VA MAIN <40-A>
[Q2914] BUFFER
1.9V
2.6V
/K1
/R2933\ 1500 2%
+10.3VA MAIN <40-A>
V53 20µsec 3.7Vp-p
V54 20µsec 3.2Vp-p
V55 20µsec 3.1Vp-p
/R2934\ 100

SEL Y → TO DEFLECTION 1 SCHEMATIC <1-D>
DEFEAT ← FROM D2PIP <1-E> OR D2T2PIP 4 <61-E>
R OUT → TO VIDEO 5 SCHEMATIC <81-G>
G OUT → TO VIDEO 5 SCHEMATIC <81-F>
B OUT → TO VIDEO 5 SCHEMATIC <81-G>
BEAM ← FROM DEFLECTION 1 SCHEMATIC <1-E>

MAIN PCB

VIDEO SCHEMATIC (5 of 5)



86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SOFT START
CR5003
[R5023] 200K
C5009 100µF 35V
+10.3VB CRTS <80-F>

FIELD CURRENT SOURCE
VARIABLE CURRENT SOURCE
ERROR AMP
FIELD CURRENT SOURCE
VARIABLE CURRENT SOURCE
ERROR AMP

15 SENSE2 3.7V
18 IN3
17 OUT3 9.7V
20 VCC 10.1V
19 FILT3 2.8V
21 SENSE3 3.6V
2 IN1
1 OUT1 9.5V
8 IREF2 4.1V
3 FILT1 3.1V
12 SOFT START 4.2V
5 SENSE1 4.0V

/R5084 1000
V71 20µsec 5.0Vp-p
[Q5028] BUFFER 5.3V 4.4V
/R5083 5600
+10.3VB CRTS <80-F>
V65 20µsec 5.0Vp-p
V69 20µsec 1.5Vp-p
NC
/R5047 18
+10.3VB CRTS <80-F>
C5006 1µF 100V
V72 20µsec 4.9Vp-p
/R5086 1000
[Q5029] BUFFER 5.2V 4.3V
/R5085 5600
+10.3VB CRTS <80-F>
V70 20µsec 1.6Vp-p
/R5021 20K
C5004 1µF 100V
/R5088 1000
V73 20µsec 4.0Vp-p
[Q5030] BUFFER 5.7V 4.9V
/R5087 5600
+10.3VB CRTS <80-F>
R5033 1000
V61 20µsec 118Vp-p
/R5017 10
R5040 47
Q5003 DRIVER 9.9V 167V 10.5V
HEAT SINK
R5043 510
+10.3VB CRTS <80-F>
Q5009 DRIVER 5.7V 164V
CR5009 6.8V
C5013 68
R5012 120K
R5046 47
JW509
CR5006
R5029 100
L5008 22µH
167
Q5008 DRIVER 164V
+250V CRTS <80-D>
V67 20µsec 4.0Vp-p
V64 20µsec 121Vp-p
[R5018] 51
/JC507
R5009 12K 3W
+250V CRTS <80-D>
R5032 1000
V66 20µsec 5.1Vp-p
R5011 120K
JW502
[R5015] 10
R5039 47
Q5002 DRIVER 9.9V 173V 10.5V
HEAT SINK
R5042 510
V60 20µsec 118Vp-p
Q5007 DRIVER 5.2V 171V
CR5008 6.8V
C5012 68
R5045 47
[R5016] 51
CR5005
R5027 100
171V
Q5006 DRIVER
+250V CRTS <80-D>
V63 20µsec 118Vp-p
C5016 0.33 63V
R5026 18
+10.3VB CRTS <80-F>
R5008 12K 3W
L5007 22µH
174V
+250V CRTS <80-D>
5.3V 180V
CR5007 6.8V
C5011 68
R5044 47
JW501
R5010 100K
Q5004 DRIVER
+250V CRTS <80-D>
V62 20µsec 148Vp-p

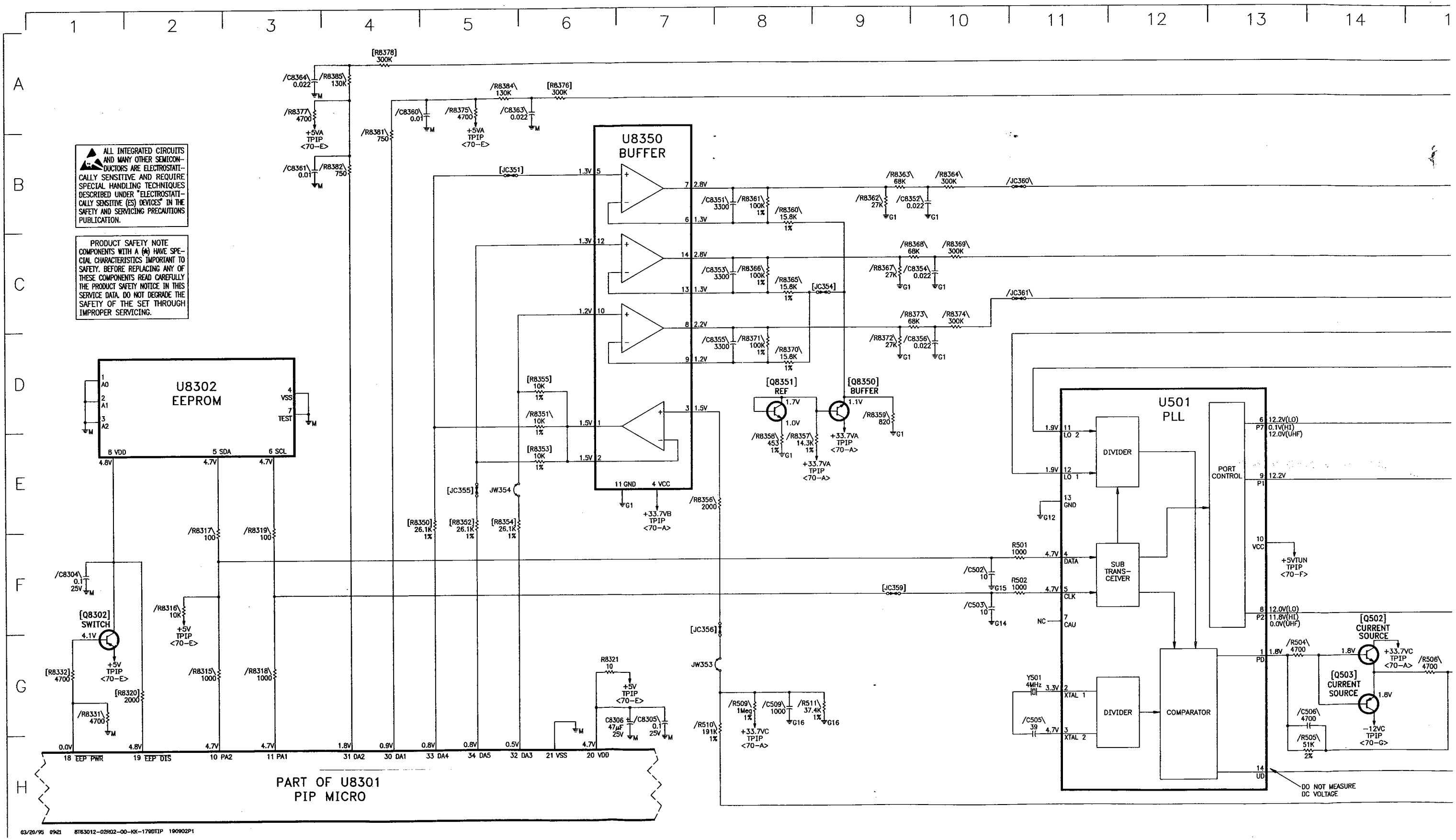
V57 20µsec 2.2Vp-p
[Q5021] DRIVER 9.6V 2.6V 2.0V
/R5060 330
/C5022 56
/R5063 10
/R5055 240 2%
/C5017 150
/R5069 100 0.4V 1.0V
[Q5014] REF
V58 20µsec 1.7Vp-p
[Q5024] DRIVER 9.4V 2.7V 2.1V
[JC501]
/R5070 330
/C5023 56
/R5073 10
/R5058 240 2%
/C5019 150
/R5068 100 0.4V 1.0V
[Q5015] REF
[Q5016] TEMP COMP 1.0V 0.4V
/R5049 910 2%
/R5056 100
+10.3VA CRTS <80-F>
10.6V
/R5052 240
/C5024 0.1 25V
R5033 1000

CRT DRIVER PCB
J5001 GND 1 K GND 2
P5001 K
★R5004 1000 1/2W,10% L5001 22µH 9 R 181V
★R5005 1000 1/2W,10% L5002 22µH 7 G 171V
L5003 22µH ★R5006 1000 1/2W,10% 12 B 165V
10 H2
V101 CRT
KS5001
ANODE VOLTAGE nom. 32KV
SPARK GAPS ARE AN INTEGRAL PART OF THE KINE SOCKET
H1 11 0V
G1 13 6 21V
G2 8
1
R5089 1000 1/2W 10%
R5037 2200 1/2W 10%
R5036 15K 1/2W 10%
R5035 180K 1/2W 10%
C5002 0.012 250V
+250V CRTS <80-D>
C5003 3300 3kV
CR6201
C6201 0.22 100V
E5007
E5009
EKS5007
HORIZ B <40-D>
SCREEN <40-C>
FOCUS1 <40-B>
FOCUS2 <40-C>
HV <40-A>
CRT DRIVER PCB
MAIN PCB

J5101 GND 4 NC 3 HORIZ 2 NC 1
P6201 1 2 3 4 K NC NC
R6209 47 1/2W,2%
R6208 820 1/2W 2%
R6206 220 1/2W 2%
SW6201 STRENGTH OFF LOW HIGH NC NC
CR6204 15V
C6203 47µF 35V
V74 20µsec 334mVp-p STRENGTH--HIGH POLARITY--POS
J6202 P6202
FIELD NEUT. COIL
SW6202 POLARITY POS NEG
R6205 10K
Q6202 SWITCH
JW212 R6207 4700 0.0V
0.0V(OFF) 1.4V(LOW) 3.6V(HIGH)
/R6204 4700
JW211
CR6203
PART OF P1002
PART OF J4102
1 +12V
2 -12V
3 +5V
4 FB PULSE
5 DEGAUSS
NC
HORIZ C <40-E>
IN/OUT PCB
MAIN PCB
CRT DRIVER PCB | IN/OUT PCB

DEGAUSS
JW430
/C3106 1000
/R3113 2200
C13 0.1V
C2
+5VSB1E MAIN <40-H>
21 VSS 20 VDD 4 DEGAUSS
PART OF U3101 SYSTEM CONTROL
THIS CIRCUIT ALSO APPEARS ON POWER 1 SCHEMATIC

PIX-IN-PIX (D2T2PIP) SCHEMATIC (1 of 4)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U8350 BUFFER
U8302 EEPROM
U501 PLL
[Q8302] SWITCH
[Q8351] REF
[Q8350] BUFFER
[Q502] CURRENT SOURCE
[Q503] CURRENT SOURCE
DIVIDER
COMPARATOR
PORT CONTROL
SUB TRANS-CEIVER
PART OF U8301 PIP MICRO
DO NOT MEASURE DC VOLTAGE
03/20/95 0921 8T83012-02R02-00-KK-179DTIP 190902P1

PIX-IN-PIX (D2T2PIP) SCHEMATIC (1 of 4)

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

IF VC1 → TO D2T2PIP 2 SCHEMATIC <40-D>

IF VC2 → TO D2T2PIP 2 SCHEMATIC <40-C>

RF SEC → TO D2T2PIP 2 SCHEMATIC <21-A>

RF PRI → TO D2T2PIP 2 SCHEMATIC <21-A>

SINGLE TUNED → TO D2T2PIP 2 SCHEMATIC <21-A>

LO 1 ← FROM D2T2PIP 2 SCHEMATIC <40-A>

LO 2 ← FROM D2T2PIP 2 SCHEMATIC <40-A>

[R8376] 300K

U8350 BUFFER

1.3V 5 → 7 2.8V
/C8351 3300 | /R8361 100K 1% | /R8360 15.8K 1%
6 1.3V
/R8363 68K | /R8364 300K | /JC360 | /R8362 27K | /C8352 0.022 | G1

1.3V 12 → 14 2.8V
/C8353 3300 | /R8366 100K 1% | /R8365 15.8K 1% | [JC354]
13 1.3V
/R8368 68K | /R8369 300K | /R8367 27K | /C8354 0.022 | G1

1.2V 10 → 8 2.2V
/C8355 3300 | /R8371 100K 1% | /R8370 15.8K 1%
9 1.2V
/JC361
/R8373 68K | /R8374 300K | /R8372 27K | /C8356 0.022 | G1

[R8355] 10K 1%
/R8351 10K 1% — 1.5V 1
[R8353] 10K 1% — 1.5V 2
3 1.5V
11 GND — G1
4 VCC — +33.7VB TPIP <70-A>
/R8356 2000

[Q8351] REF: 1.7V; 1.0V; /R8358 453 1%; /R8357 14.3K 1%; G1; +33.7VA TPIP <70-A>
[Q8350] BUFFER: 1.1V; +33.7VA TPIP <70-A>; /R8359 820; G1

[JC356]
JW353
/R509 1Meg 1% | /C509 1000 | /R511 37.4K 1% | G16
/R510 191K 1% — +33.7VC TPIP <70-A>

R8321 10 — +5V TPIP <70-E>
C8306 47µF 25V | /C8305 0.1 25V | M
4.7V
DA3 21 VSS 20 VDD

U501 PLL

1.9V 11 LO 2 → DIVIDER
1.9V 12 LO 1 → DIVIDER
13 GND — G12
R501 1000 — 4.7V 4 DATA
/C502 10 — G15
[JC359]
R502 1000 — 4.7V 5 CLK
/C503 10 — G14
NC 7 CAU
SUB TRANS-CEIVER

Y501 4MHz — 3.3V 2 XTAL 1; 3 XTAL 2 — 4.7V
/C505 39
DIVIDER
COMPARATOR
PORT CONTROL

6 P7 12.2V(LO) 0.1V(HI) 12.0V(UHF)
9 P1 12.2V
10 VCC — +5VTUN TPIP <70-F>
8 P2 12.0V(LO) 11.8V(HI) 0.0V(UHF)
1 PD 1.8V — /R504 4700 — [Q502] CURRENT SOURCE 1.8V — +33.7VC TPIP <70-A> — /R506 4700 — C507 0.1µF 63V
[Q503] CURRENT SOURCE 1.8V — −12VC TPIP <70-G>
/C506 4700 | /R505 51K 2%
14 UD — DO NOT MEASURE DC VOLTAGE

[Q504] SWITCH — 6.2V(CH.6) — G12
/R508 4700 | /R507 4700 — +33.7VC TPIP <70-A>

[Q501] SWITCH — −11.9V(LO) 11.9V(HI) −11.9V(UHF)
+12VTUN TPIP <70-C>
/R503 100K — −12VC TPIP <70-G>
[JC707] | /C715 1000 | G17 → BS2

[Q505] SWITCH — −4.3V
+12VTUN TPIP <70-C>
[R513] 4700 — −12VC TPIP <70-G>
/C424 100 | /C407 33 | G9 | G1 | /C411 33 | G1 → BS4

[Q506] SWITCH — 11.9V(LO) 11.8V(HI) 11.4V(UHF)
+12VTUN TPIP <70-C>
[JC702] → BSM

/JC706 → BSU

[Q507] SWITCH — −2.4V(LO) −2.5V(HI) 11.2V(UHF)
/R514 6800 2% — −12VC TPIP <70-G>
/R516 6800 2% — +5VTUN TPIP <70-F>

/CR501 | [R517] 7500 | /C301 1000 | G6 → BSU1

[Q508] SWITCH — 11.9V(LO) 11.8V(HI) 11.7V(UHF)
/R515 220K 2% — −12VC TPIP <70-G>
/C504 1000 | G10 | JW702 | JW706
/C316 1000 | /C510 1000 | G17 → BSV4
/C511 1000 | G5 → BSV3
/C113 1000 | G4 → BSV2
[R518] 100 — /C125 100 | G1 → VT
/R512 20K 2% — /C508 4700 | G17

D2T2PIP PCB

PIX-IN-PIX (D2T2PIP) SCHEMATIC (2 of 4)

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

A B C D E F G H

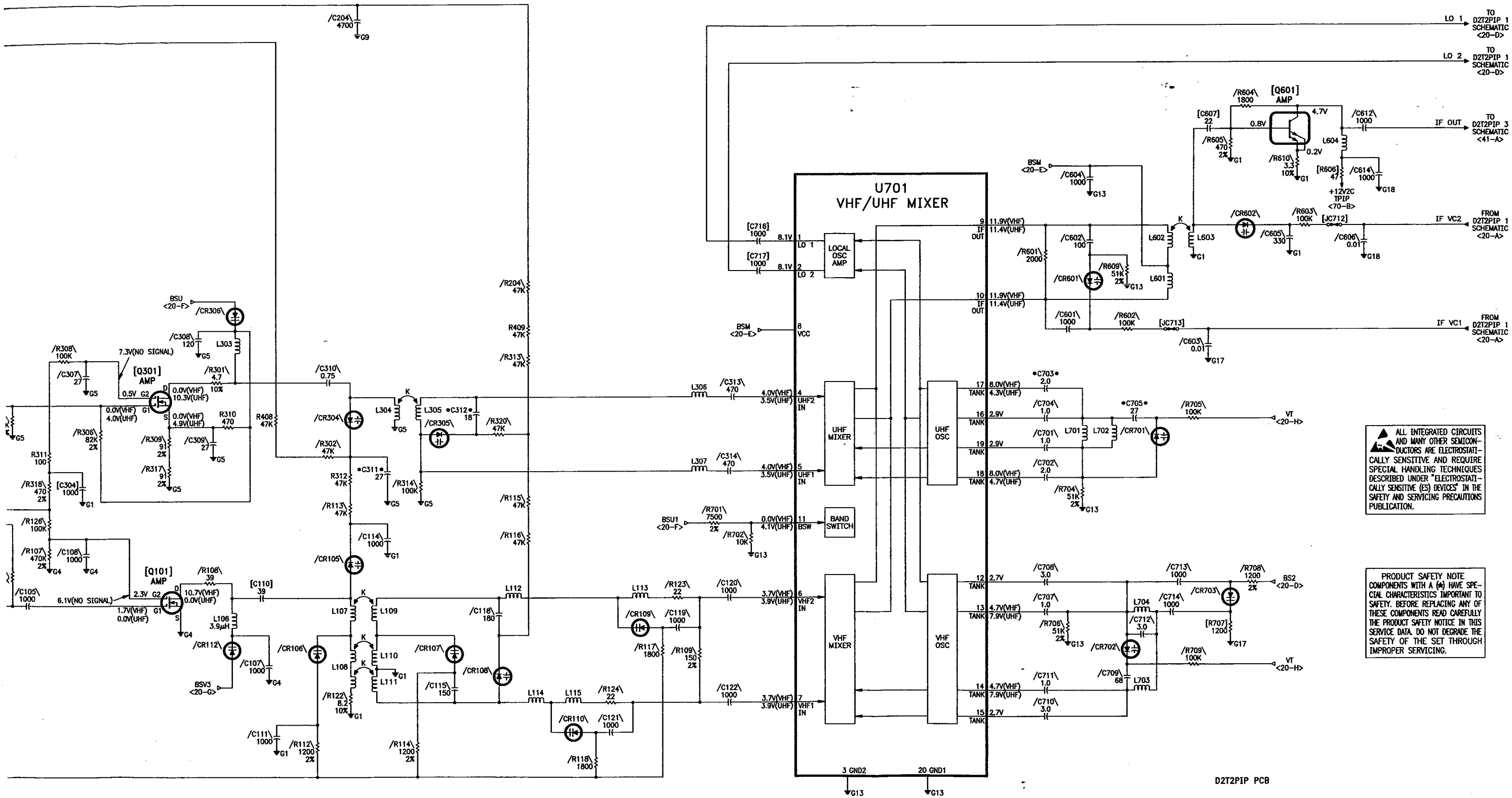
FROM D2T2PIP 1 SCHEMATIC <20-B> RF SEC
FROM D2T2PIP 1 SCHEMATIC <20-C> RF PRI
FROM D2T2PIP 1 SCHEMATIC <20-C> SINGLE TUNED
FROM D2T2PIP 3 SCHEMATIC <41-D> RF AGC
TO/FROM TUNER 1 SCHEMATIC E702 <20-A>
BSU <20-F>
BSV2 <20-G>
BS2 <20-D>
BSV3 <20-G>
BSM <20-E>
BSU1 <20-F>

/C204\ 4700 G9
/R203\ 47K
/C203\ 4700 G9
/C201\ 4700 G7
/R402\ 47K
/R315\ 47K
/R204\ 47K
R409 47K
/R313\ 47K
/R304\ 1000
/R303\ 3000 2%
/R308\ 100K
/C307\ 27 G5
7.3V(NO SIGNAL)
[Q301] AMP
0.5V G2
0.0V(VHF) 4.0V(UHF) G1
0.0V(VHF) 10.3V(UHF)
/R301\ 4.7 10%
0.0V(VHF) 4.9V(UHF)
R310 470
/R309\ 91 2%
/C309\ 27 G5
/R317\ 91 2% G5
/CR306\
/C308\ 120 G5
L303
/C310\ 0.75
R408 47K
/R302\ 47K
/C311\ 27 G5
/R314\ 100K G5
/R312\ 47K
/R113\ 47K
/C114\ 1000 G1
/CR105\
/R115\ 47K
/R116\ 47K
/CR304\
/CR305\
L304 L305 •C312 18
/R320\ 47K
L306 /C313\ 470
L307 /C314\ 470
/R306\ 82K 2%
/R311\ 100
/R318\ 470 2%
[C304] 1000 G1
/R126\ 100K
/R107\ 470K 2%
/C108\ 1000 G4
/R111\ 100
/C202\ 0.01 G1
/C112\ 1000 G4
/R103\ 47K
/C104\ 330 G1
/CR102\
/R104\ 47K
/C105\ 1000
6.1V(NO SIGNAL)
[Q101] AMP
2.3V G2
1.7V(VHF) 0.0V(UHF) G1
/R108\ 39
10.7V(VHF) 0.0V(UHF)
[C110] 39
L106 3.9µH
/CR112\
/C107\ 1000 G4
L112
/C118\ 180
/CR106\
/CR107\
/CR108\
L107 L109 L110 L108 L111 G1
/R122\ 8.2 10% G1
/C115\ 150
/C111\ 1000 G1
/R112\ 1200 2%
/R114\ 1200 2%
L113 /R123\ 22 /C120\ 1000
/CR109\ /C119\ 1000
/R117\ 1800
/R109\ 150 2%
/C122\ 1000
L114 L115 /R124\ 22
/CR110\ /C121\ 1000
/R118\ 1800
/R701\ 7500 2%
/R702\ 10K G13
/C401\ 27
/C302\ 10
/CR301\
L301
L308 G1
/R106\ 1500 G1
/CR303\
/R305\ 47K
•C305 27 G5
/CR111\
/R120\ 1500
/C124\ 470
/CR113\
/R121\ 3000
FL101
/R101\ 15
L102
/CR101\
/C117\ 1.5
/C102\ 1000
/R102\ 1200 2%
L103
L104
/CR104\
/C106\ 1000 G1
L105 G1
/C116\ 1000 G1
/C103\ 1000 G1
/JC714\
[R119] 100
/R105\ 1800
/CR103\
/CR307\
L302 G5
/C306\ 12
/R307\ 51K 2% G5
R316 47K
R319 47K
/CR301\
L301
/CR303\
/R305\ 47K
•C305 27 G5
L308 G1
/R106\ 1500 G1
/C401\ 27
/C302\ 10
/R304\ 1000
/R303\ 3000 2%
/R402\ 47K
/R315\ 47K
/CR111\
/R120\ 1500
/C124\ 470
/CR113\
/R121\ 3000
FL101
/R101\ 15
L102
/CR101\
/C117\ 1.5
/C102\ 1000
/R102\ 1200 2%
L103
L104
/CR104\
/C105\ 1000
/C106\ 1000 G1
L105 G1
/C116\ 1000 G1
/C103\ 1000 G1
/JC714\
[R119] 100
/R105\ 1800
/CR103\

U701
VHF/UHF MIXER
[C716] 1000 8.1V 1 LO 1
[C717] 1000 8.1V 2 LO 2
LOCAL OSC AMP
8 VCC
4.0V(VHF) 3.5V(UHF) 4 UHF2 IN
4.0V(VHF) 3.5V(UHF) 5 UHF1 IN
0.0V(VHF) 4.1V(UHF) 11 BSW
3.7V(VHF) 3.9V(UHF) 6 VHF2 IN
3.7V(VHF) 3.9V(UHF) 7 VHF1 IN
3 GND2
20 GND1
G13
UHF MIXER
UHF OSC
BAND SWITCH
VHF MIXER
VHF OSC

03/28/95 09:33 8T63012-02R02-00-KK-1790TPIP 191002P2

6 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40



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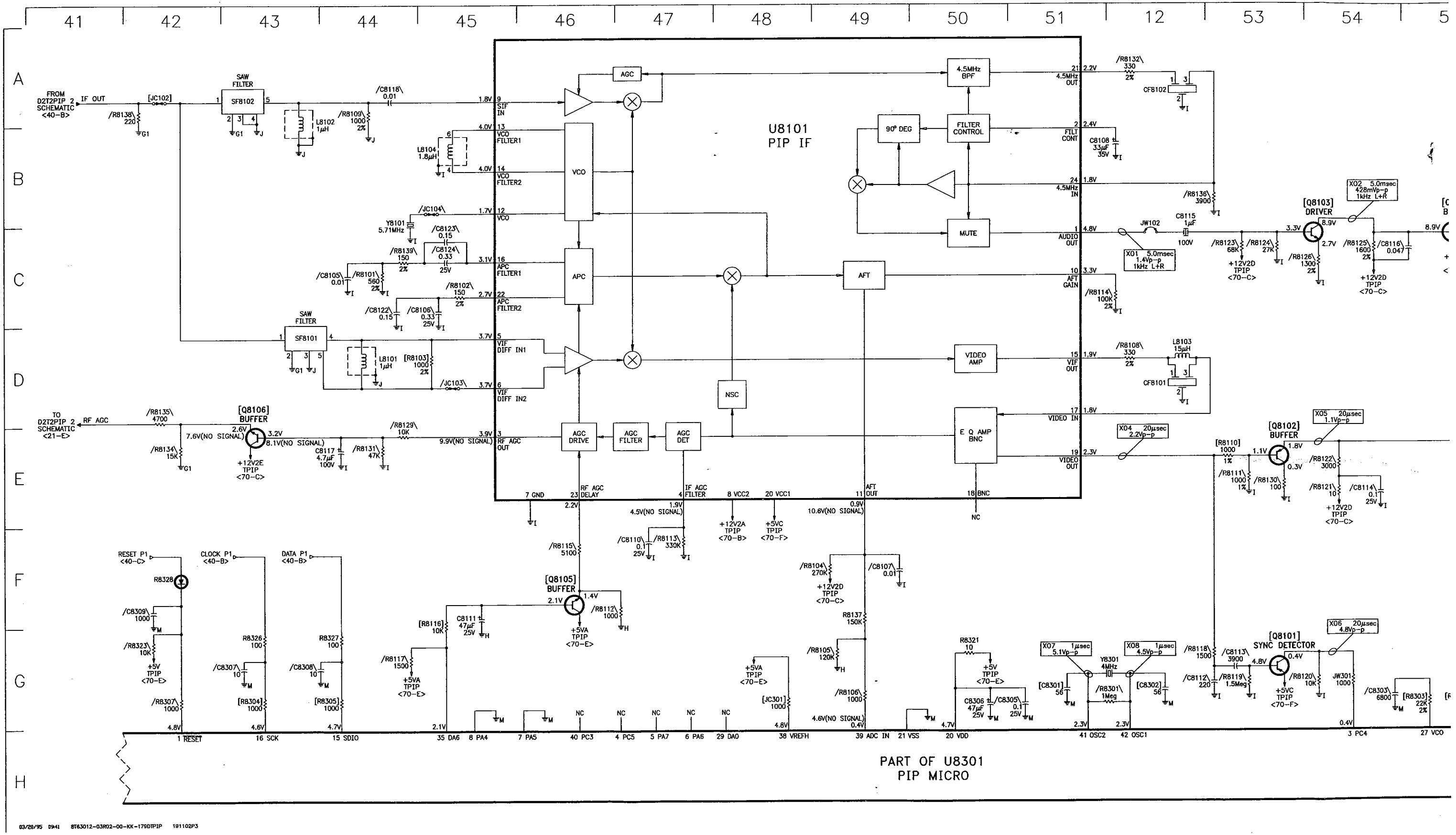
PIX-IN-PIX (D2T2PIP) SCHEMATIC (3 of 4)



PIX-IN-PIX (D2T2PIP) SCHEMATIC (3 of 4)

46 | 47 | 48 | 49 | 50 | 51 | 12 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60

U8101
PIP IF

AGC
VCO
APC
AGC DRIVE
AGC FILTER
AGC DET
NSC
AFT
4.5MHz BPF
90° DEG
FILTER CONTROL
MUTE
VIDEO AMP
E Q AMP BNC

21 4.5MHz OUT 2.2V — /R8132\ 330 2% — CFB102 1 3 2 I
2 FILT CONT 2.4V — C8108 33µF 35V I
24 4.5MHz IN 1.8V — /R8136\ 3900 I
1 AUDIO OUT 4.8V — JW102 — C8115 1µF 100V — X01 5.0msec 1.4Vp-p 1kHz L+R
10 AFT GAIN 3.3V — /R8114\ 100K 2% I
15 VIF OUT 1.9V — /R8108\ 330 2% — L8103 15µH — CF8101 1 3 2 I
17 VIDEO IN 1.8V
19 VIDEO OUT 2.3V — X04 20µsec 2.2Vp-p

7 GND
23 RF AGC DELAY 2.2V — /R8115\ 5100
4 IF AGC FILTER 1.9V 4.5V(NO SIGNAL) — /C8110\ 0.1 25V I — /R8113\ 330K I
8 VCC2 — +12V2A TPIP <70-B>
20 VCC1 — +5VC TPIP <70-F>
11 AFT OUT 0.9V 10.6V(NO SIGNAL) — /R8104\ 270K — +12V2D TPIP <70-C> — /C8107\ 0.01 I — R8137 150K — /R8105\ 120K H — /R8106\ 1000 4.6V(NO SIGNAL)
18 BNC — NC

[Q8105] BUFFER 2.1V — 1.4V — /R8112\ 1000 H — +5VA TPIP <70-E>

+5VA TPIP <70-E> — [JC301] 1000 4.8V

R8321 10 — +5V TPIP <70-E> — C8306 47µF 25V M — C8305 0.1 25V M — 4.7V

[C8301] 56 M — Y8301 4MHz — /R8301\ 1Meg — [C8302] 56 M — 2.3V 2.3V

[R8110] 1000 1% — 1.1V — [Q8102] BUFFER — 1.8V — 0.3V
/R8111\ 1000 1% I — /R8130\ 100 I
/R8122\ 3000 — /R8121\ 10 — +12V2D TPIP <70-C> — /C8114\ 0.1 25V I
X05 20µsec 1.1Vp-p

[Q8101] SYNC DETECTOR
/R8118\ 1500 — /C8113\ 3900 — 4.8V — 0.4V
/C8112\ 220 I — /R8119\ 1.5Meg I — +5VC TPIP <70-F> — /R8120\ 10K I — JW301 1000 — 0.4V
X06 20µsec 4.8Vp-p
/C8303\ 6800 M — [R8303] 22K 2% — [R8302] 10K M — /R8308\ 100K — +5VA TPIP <70-F> — /JC357\ 10K G1 — 0.4V

X02 5.0msec 428mVp-p 1kHz L+R
X03 5.0msec 422mVp-p 1kHz L+R

[Q8103] DRIVER — 3.3V — 8.9V — 2.7V
/R8123\ 68K — +12V2D TPIP <70-C>
/R8124\ 27K I
/R8126\ 1300 2% I
/R8125\ 1600 2% — +12V2D TPIP <70-C>
/C8116\ 0.047

[Q8104] BUFFER — 8.9V — 8.2V
+12V2D TPIP <70-C>
/R8127\ 1000 I
/R8128\ 100

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PART OF P8005
2TUN VID 1
2TUN AUD 2
GND 3
SUB VIDEO 4
JW103 — 1
TO/FROM VIDEO 1 SCHEMATIC J6506 <1-B> AND AUDIO 1 SCHEMATIC J6506 <1-H>

NC NC NC NC NC NC
[JC301] 1000 4.8V
/R8106\ 1000 4.6V(NO SIGNAL) 0.4V
M 4.7V

-A5
40 PC3
4 PC5
5 PA7
6 PA6
29 DA0
38 VREFH
39 ADC IN
21 VSS
20 VDD
41 OSC2
42 OSC1
3 PC4
27 VCO
26 R1
37 PCO

PART OF U8301
PIP MICRO

D2T2PIP PCB

PIX-IN-PIX (D2T2PIP) SCHEMATIC (4 of 4)

61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

A B C D E F G H

J8003
3 MAIN LUMA
2 GND
1 MAIN CHROMA
TO/FROM VIDEO 2 SCHEMATIC P6507 <40-A>

PART OF P8005
1 2TUN VID
2 2TUN AUD
3 GND
4 SUB VIDEO
TO/FROM VIDEO 1 SCHEMATIC J6506 <20-A>

D2T2PIP PCB
MAIN PCB

FROM DEFLECTION 1 SCHEMATIC <1-B>
SANDCASTLE
PART OF J3002
PART OF P8002
SANDCASTLE 1
ENABLE 2
RESET 3
IM CLK 4
DATA 5
DEFEAT 6
GND 7
+9.5V 8
V SYNC 9
LOW PWR 10
+12V 11
IIC CLK 12
13
TO VIDEO 3 SCHEMATIC <80-B>
VERT C <20-C>
JW254
FROM POWER SUPPLY SCHEMATIC <21-G>
LOW PWR 2
MAIN PCB
D2T2PIP PCB

[C8216] 0.01
/R8220\ 51
/R8225\ 6800
/R8224\ 6200
[Q8204] BUFFER
2.9V
2.3V
X09 20µsec 700mVp-p
/R8226\ 1500
+5.5V TPIP <70-D>
[R8230] 10
L8204 68µH
/C8248\ 470
/R8240\ 220 2%
[R8231] 330 2%
[C8249] 220
/C8231\ 10
/R8232\ 1000 2%
[Q8205] BUFFER
1.5V
2.2V
X10 20µsec 1.1Vp-p
/R8233\ 680
FB8204
[Q8201] INVERTER
[Q8202] INVERTER
0.2V
0.6V
1.4V
X11 20µsec 694mVp-p
X12 20µsec 5.7Vp-p
/R8203\ 1000
/R8204\ 1000
/R8201\ 15K 2%
/R8202\ 5600 2%
ENABLE P1 <40-B>
/R8254\ 100
[C8203] 10
R8250 1000
RESET P1 <40-C>
[R8207] 100
/C8215\ 1000
CLOCK P1 <40-B>
/R8210\ 100
[C8201] 10
DATA P1 <40-B>
/R8211\ 100
/C8202\ 10
JW207
NC
ENABLE P1 <40-B>
R8325 1000
/R8329\ 100
[JC302]
/R8401\ 1000
[Q8401] BUFFER
0.2V
0.3V
X13 5.0msec 4.9Vp-p
/R8402\ 1000
CR8302
R8321 10
/R8324\ 100K
/R8306\ 1000
/C8310\ 10
CR8301
/R8310\ 1000
/R8309\ 1000
C8306 47µF 25V
/C8305\ 0.1 25V
4.7V
21 VSS
20 VDD
2 IRQ
9 PA3
25 V SYNC
24 H SYNC
PART OF U8301 PIP MICRO

R8241 100
/C8214\ 0.22 25V
/R8209\ 510
/R8214\ 1000
/R8206\ 1000
/R8212\ 1000
/R8213\ 1000
/R8215\ 300
/C8208\ 0.1 25V
/C8209\ 39
/R8216\ 1Meg
Y8201 14.318MHz
/C8210\ 15
/R8217\ 2000
/C8211\ 0.22 25V
/C8212\ 0.033
/R8218\ 2.2Meg
/R8219\ 220K
/C8213\ 0.22 25V
/C8223\ 0.01
/C8222\ 0.01
/C8205\ 0.33 25V
X14 0.2µsec 1.0Vp-p
X15 0.2µsec 1.5Vp-p
X16 20µsec 5.4Vp-p
X17 5.0msec 5.4Vp-p
R8251 10
X26 20µsec 5.6Vp-p

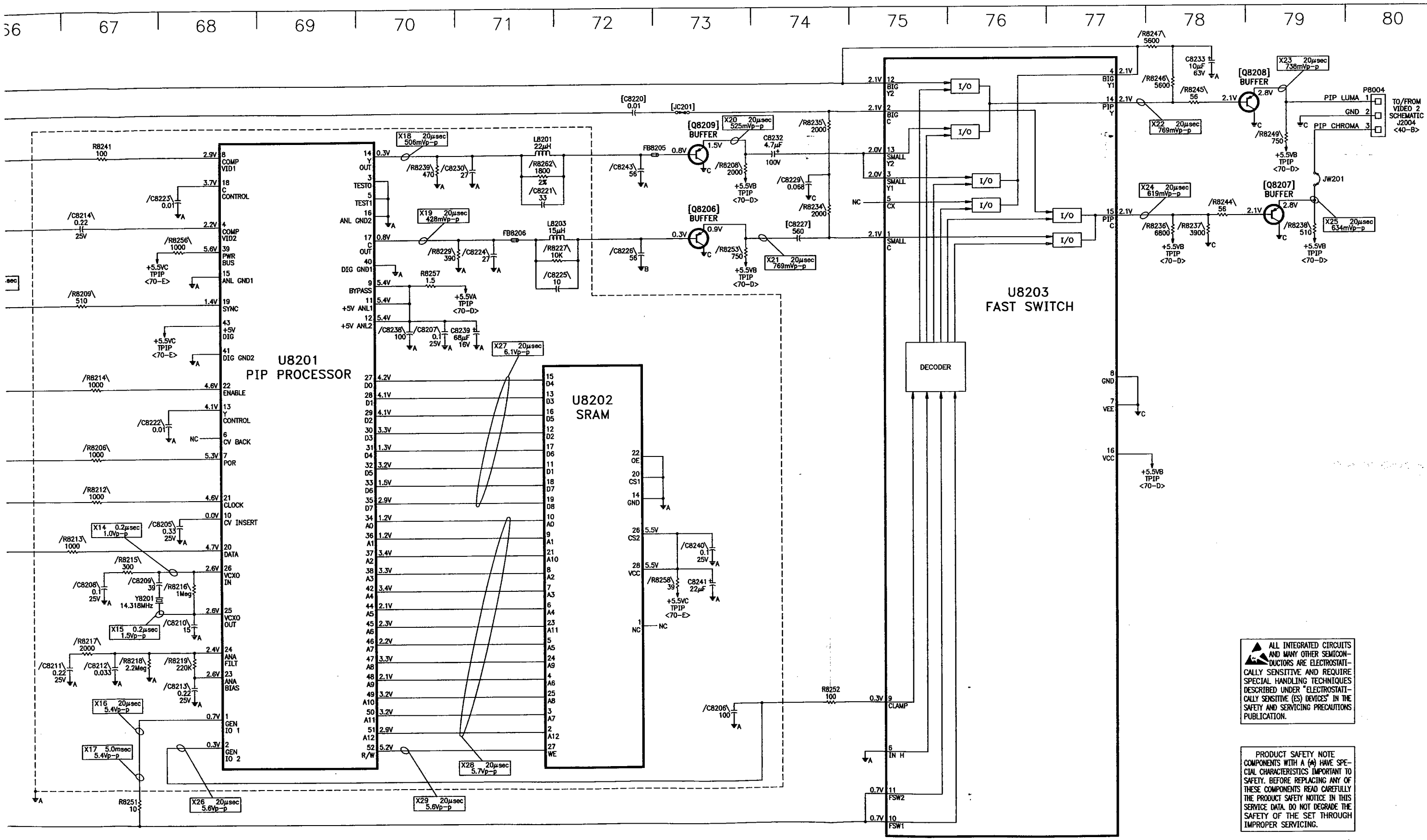
U8201 PIP PROCESSOR
8 COMP VID1 2.9V
18 C CONTROL 3.7V
4 COMP VID2 2.2V
39 PWR BUS 5.6V
15 ANL GND1
19 SYNC 1.4V
43 +5V DIG
41 DIG GND2
22 ENABLE 4.6V
13 Y CONTROL 4.1V
6 CV BACK NC
7 POR 5.3V
21 CLOCK 4.6V
10 CV INSERT 0.0V
20 DATA 4.7V
26 VCXO IN 2.6V
25 VCXO OUT 2.6V
24 ANA FILT 2.4V
23 ANA BIAS 2.6V
1 GEN IO 1 0.7V
2 GEN IO 2 0.3V

14 Y OUT 0.3V
3 TEST0
5 TEST1
16 ANL GND2
17 C OUT 0.6V
40 DIG GND1
9 BYPASS 5.4V
11 +5V ANL1 5.4V
12 +5V ANL2 5.4V
X18 20µsec 506mVp-p
/R8239\ 470
/C8230\ 27
L8201 22µH
/R8262\ 1800 2%
/C8221\ 33
X19 20µsec 428mVp-p
/R8229\ 390
/C8224\ 27
FB8206
L8203 15µH
/R8227\ 10K
/C8225\ 10
R8257 1.5
+5.5VA TPIP <70-D>
/C8238\ 100
/C8207\ 0.1 25V
C8239 68µF 16V
X27 20µsec 6.1Vp-p
X28 20µsec 5.7Vp-p
X29 20µsec 5.6Vp-p

U8202 SRAM
15 D4
13 D3
16 D5
12 D2
17 D6
11 D1
18 D7
19 D8
10 A0
9 A1
21 A10
8 A2
7 A3
6 A4
23 A11
5 A5
24 A9
4 A6
25 A8
3 A7
2 A12
27 WE
22 OE
20 CS1
14 GND
26 CS2
28 VCC
1 NC
/C8240\ 0.1 25V
/R8258\ 39
C8241 22µF
+5.5VC TPIP <70-E>

[C8220] 0.01
[JC201]
[Q8209] BUFFER
X20 20µsec 525mVp-p
C8232 4.7µF 100V
/R8235\ 2000
/C8243\ 56
FB8205
0.8V
1.5V
/R8208\ 2000
+5.5VB TPIP <70-D>
/C8229\ 0.068
/R8234\ 2000
[Q8206] BUFFER
0.3V
0.9V
[C8227] 560
/C8226\ 56
/R8253\ 750
X21 20µsec 769mVp-p
R8252 100
/C8206\ 100
0.3V
0.7V
2.1V 12 BIG Y2
2.1V 2 BIG C
2.0V 13 SMALL Y2
2.0V 3 SMALL Y1
NC 5 CX
2.1V 1 SMALL C
9 CLAMP
6 IN H
11 FSW2
10 FSW1
DEC

03/29/95 0949 8163012-04R02-00-KK-1780TPIP 191202P4


66
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80
U8201
PIP PROCESSOR
U8202
SRAM
U8203
FAST SWITCH
DECODER
[Q8209]
BUFFER
[Q8206]
BUFFER
[Q8208]
BUFFER
[Q8207]
BUFFER
I/O
TO/FROM
VIDEO 2
SCHEMATIC
J2004
<40-B>
PIP LUMA
PIP CHROMA
GND
JW201
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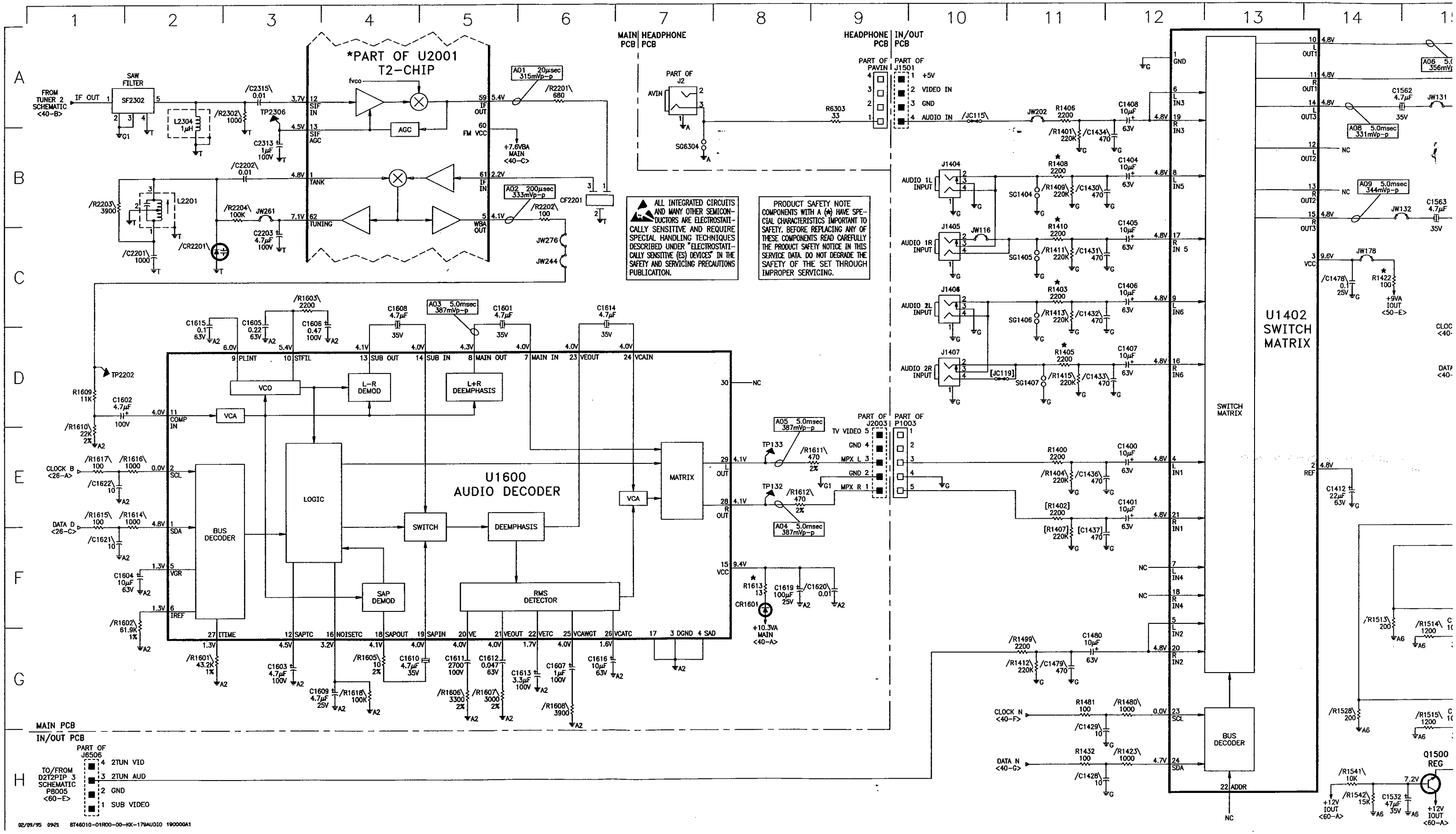
AUDIO SCHEMATIC (1 of 4)



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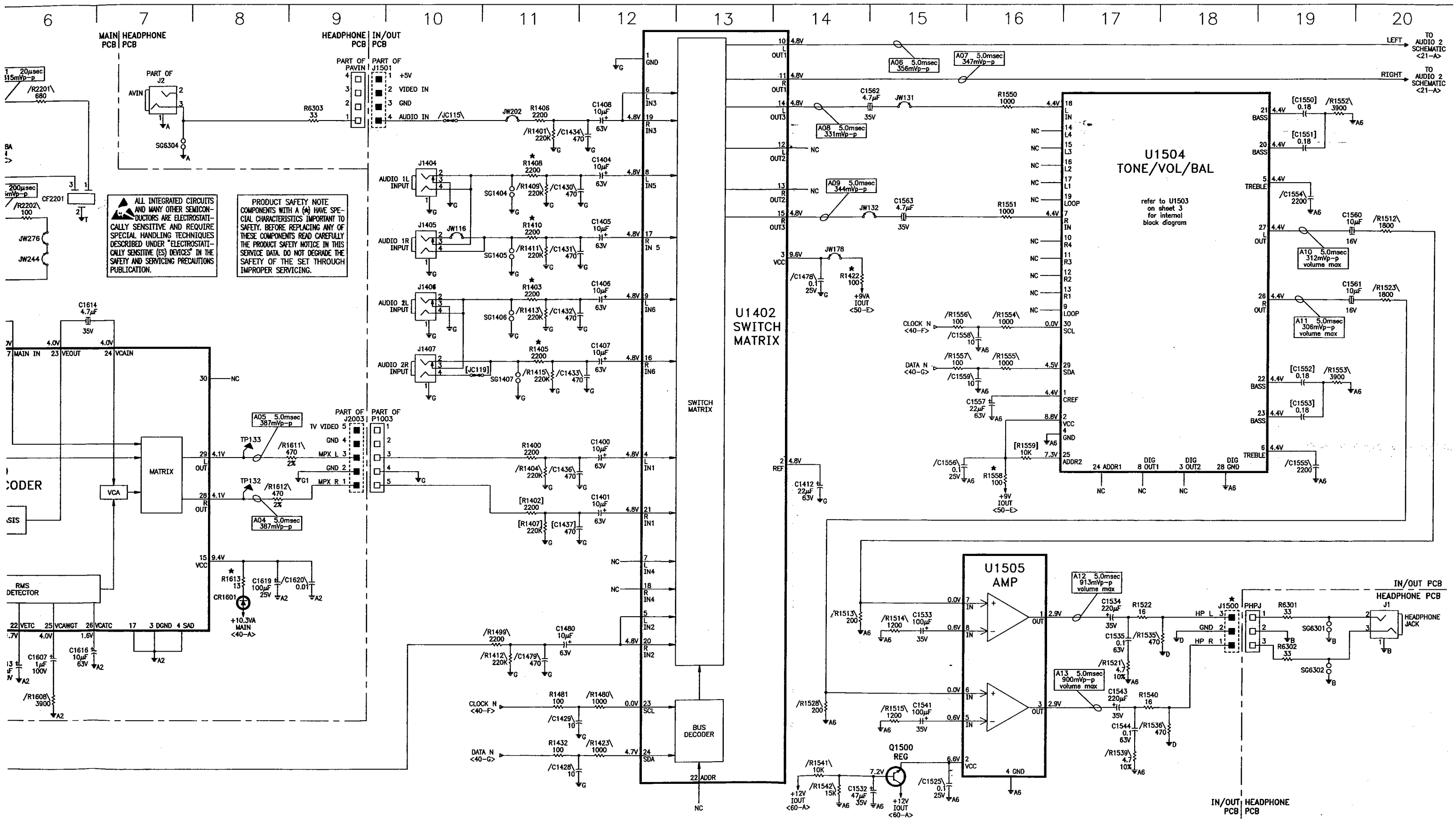
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
MAIN PCB
HEADPHONE PCB
HEADPHONE PCB
IN/OUT PCB
PART OF J2
PART OF PAVIN J1501
PART OF J2003
PART OF P1003
U1402 SWITCH MATRIX
SWITCH MATRIX
U1504 TONE/VOL/BAL
refer to U1503 on sheet 3 for internal block diagram
U1505 AMP
Q1500 REG
BUS DECODER
MATRIX
VCA
RMS DETECTOR
LEFT
RIGHT
TO AUDIO 2 SCHEMATIC <21-A>
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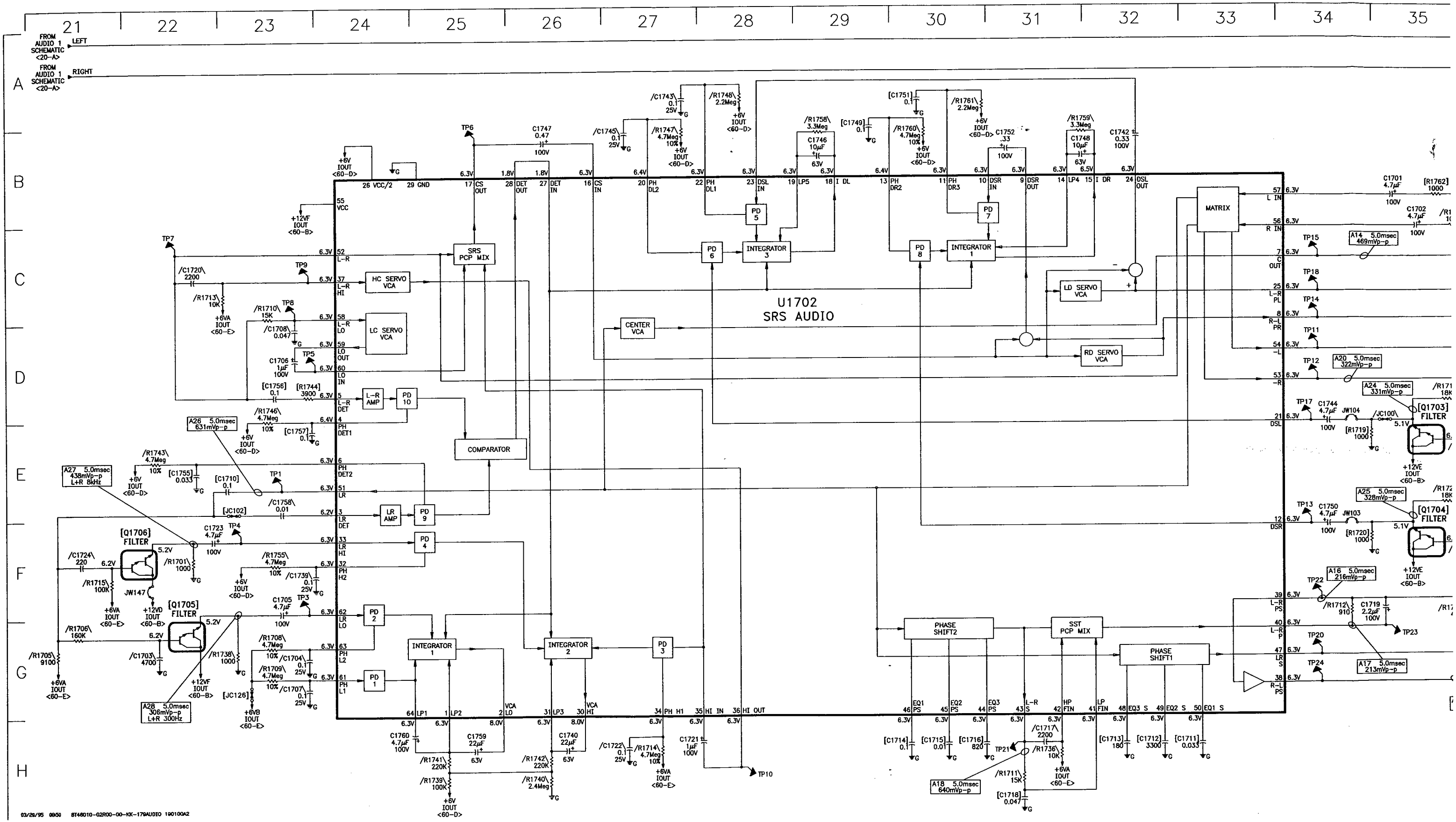
+10.3VA MAIN <40-A>
+9VA IOUT <50-E>
+12V IOUT <60-A>
CLOCK N <40-F>
DATA N <40-G>
IN/OUT PCB HEADPHONE PCB
HEADPHONE JACK

AUDIO SCHEMATIC (2 of 4)



26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

U1702
SRS AUDIO

U1710
AMP

MATRIX

CENTER VCA

LD SERVO VCA

RD SERVO VCA

PD 5 PD 6 PD 7 PD 8 PD 3

INTEGRATOR 3 INTEGRATOR 1 INTEGRATOR 2

PHASE SHIFT2 PHASE SHIFT1

SST PCP MIX

[Q1703] FILTER [Q1704] FILTER

JW203 JW205 JW124 JW190 JW104 JW103

L BYPASS → TO AUDIO 3 SCHEMATIC <41-A>

R BYPASS → TO AUDIO 3 SCHEMATIC <41-B>

SEL L → TO AUDIO 3 SCHEMATIC <41-A>

SEL R → TO AUDIO 3 SCHEMATIC <41-A>

SRS C → TO AUDIO 3 SCHEMATIC <41-C>

SRS L–R → TO AUDIO 3 SCHEMATIC <41-C>

SRS R–L → TO AUDIO 3 SCHEMATIC <41-D>

SRS L–N → TO AUDIO 3 SCHEMATIC <41-E>

SRS R–N → TO AUDIO 3 SCHEMATIC <41-G>

SST L → TO AUDIO 3 SCHEMATIC <41-H>

SST R → TO AUDIO 3 SCHEMATIC <41-H>

TP10 TP11 TP12 TP13 TP14 TP15 TP17 TP18 TP20 TP21 TP22 TP23 TP24

A14 5.0msec 469mVp–p
A15 5.0msec 213mVp–p
A16 5.0msec 216mVp–p
A17 5.0msec 213mVp–p
A18 5.0msec 640mVp–p
A19 5.0msec 634mVp–p
A20 5.0msec 322mVp–p
A21 5.0msec 319mVp–p
A22 5.0msec 338mVp–p
A23 5.0msec 534mVp–p
A24 5.0msec 331mVp–p
A25 5.0msec 328mVp–p

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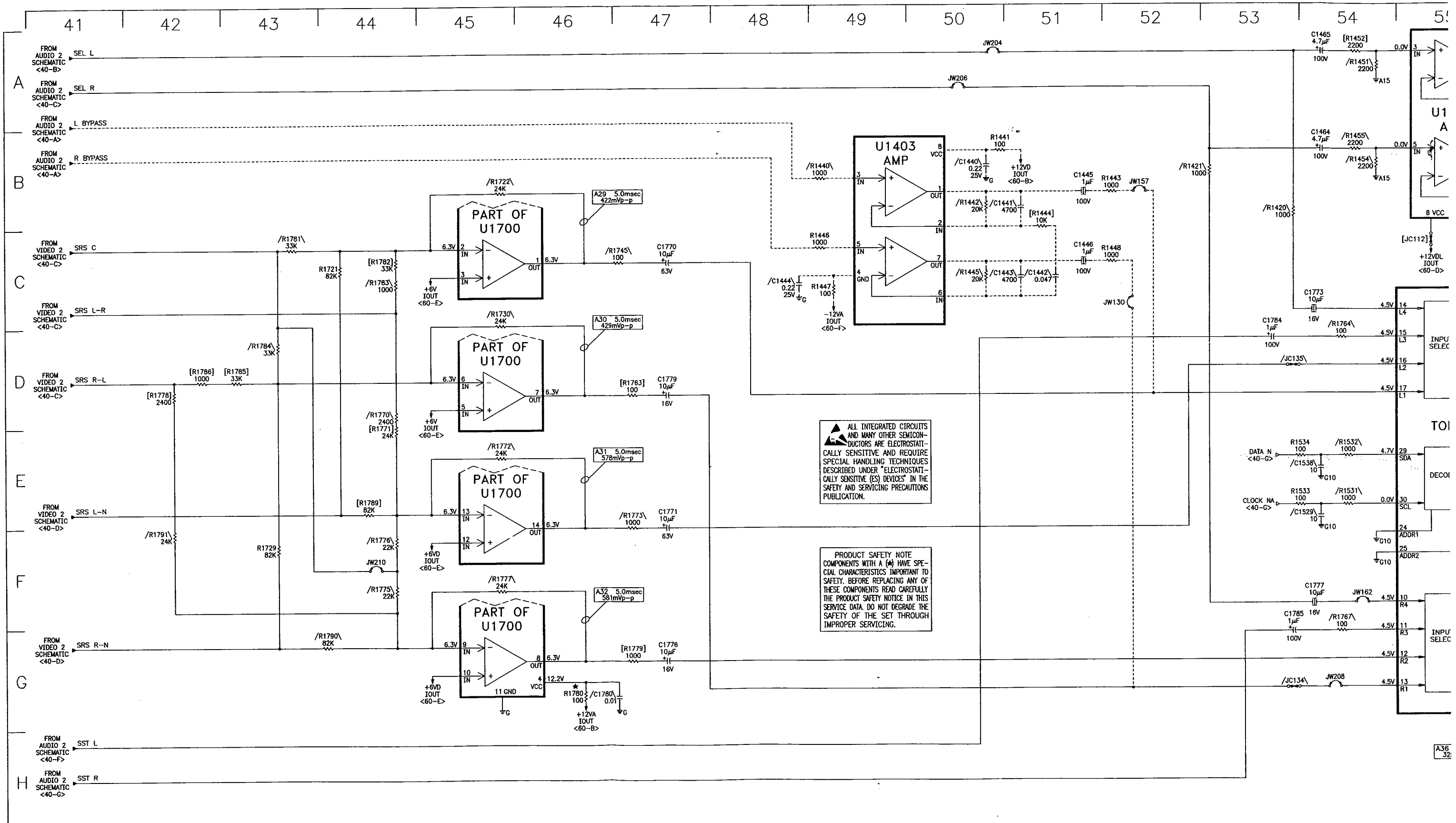
IN/OUT PCB

AUDIO SCHEMATIC (3 of 4)



AUDIO SCHEMATIC (3 of 4)

46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

JW204 JW206

U1403 AMP

U1404 AMP

U1503 TONE/VOL/BAL

INPUT SELECT

DECODER

VOLUME BASS TREBLE

DIGITAL OUTPUT

A29 5.0msec 422mVp-p

A30 5.0msec 429mVp-p

A31 5.0msec 578mVp-p

A32 5.0msec 581mVp-p

A33 5.0msec 328mVp-p

A34 5.0msec 331mVp-p

A35 5.0msec 325mVp-p

A36 5.0msec 325mVp-p

A37 5.0msec 313mVp-p max volume

A38 5.0msec 319mVp-p max volume

[Q1414] MUTE

[Q1417] MUTE

[Q1410] SWITCH

J1414 SELECTED OUT L

J1415 SELECTED OUT R

MUTE FROM AUDIO 4 SCHEMATIC <61-B>

L AUDIO TO AUDIO 4 SCHEMATIC <61-A>

R AUDIO TO AUDIO 4 SCHEMATIC <61-A>

DIG 1 TO AUDIO 4 SCHEMATIC <61-D>

DIG 2 TO AUDIO 4 SCHEMATIC <61-F>

DATA N <40-G>

CLOCK NA <40-G>

+12VD IOUT <60-B>

+12VA IOUT <60-B>

-12VA IOUT <60-F>

-12VDL IOUT <60-F>

+12VDL IOUT <60-D>

+9VA IOUT <50-E>

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IN/OUT PCB

AUDIO SCHEMATIC (4 of 4)

61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

A B C D E F G H

FROM AUDIO 3 SCHEMATIC <60-D> L AUDIO

FROM AUDIO 3 SCHEMATIC <60-G> R AUDIO

TO AUDIO 3 SCHEMATIC <60-C> MUTE

TO POWER SUPPLY 3 SCHEMATIC <41-G> DELAY

FROM AUDIO 3 SCHEMATIC <60-E> DIG 1

FROM AUDIO 3 SCHEMATIC <60-E> DIG 2

U1405 AMP

U1406 COMPARATOR

U1913 POWER AMP

U1910 COMPARATOR

[Q1415] MUTE

[Q1416] MUTE

[Q1418] DRIVER

[Q1419] DRIVER

[Q1907] SWITCH

[Q1912] SWITCH

[Q1910] DRIVER

[Q1911] DRIVER

A39 5.0msec 2.25Vp-p max volume

A40 5.0msec 2.25Vp-p max volume

A41 5.0msec 10.3Vp-p max volume

A42 5.0msec 10.4Vp-p max volume

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IN/OUT PCB | MAIN PCB

66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

U1405 AMP

U1913 POWER AMP

U1910 COMPARATOR

SW1900 INT/EXT SWITCH

[Q1907] SWITCH

[Q3107] SWITCH

[Q1415] MUTE

[Q1416] MUTE

[Q1419] DRIVER

A39 5.0msec 2.25Vp-p max volume

A40 5.0msec 2.25Vp-p max volume

A41 5.0msec 10.3Vp-p max volume

A42 5.0msec 10.4Vp-p max volume

J1410 HI-FI OUT L

J1417 HI-FI OUT R

J1904 TO/FROM INTERNAL SPEAKERS

SC1904 TO/FROM EXTERNAL (FRONT) SKEAKERS

SC1900 TO/FROM EXTERNAL (REAR) SKEAKERS

IN/OUT PCB | MAIN PCB

PART OF P1004

PART OF J3004

PART OF U3101 SYSTEM CONTROL

LOW POWER → FROM POWER SUPPLY 2 SCHEMATIC <21-G>

DC DETECT → TO POWER SUPPLY 1 SCHEMATIC <20-F>

ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTORS ARE ELECTROSTATICALLY SENSITIVE AND REQUIRE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" IN THE SAFETY AND SERVICING PRECAUTIONS PUBLICATION.

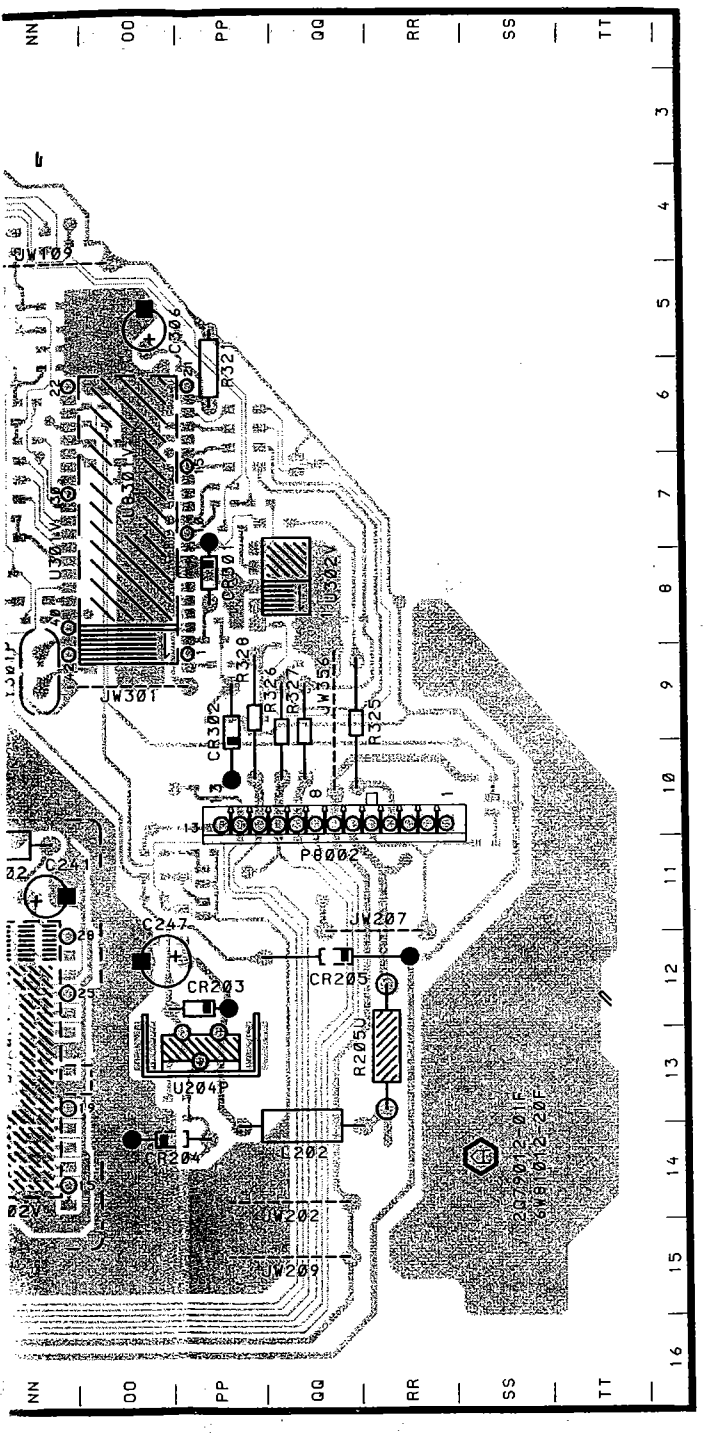
PRODUCT SAFETY NOTE
COMPONENTS WITH A (⚠) HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THIS SERVICE DATA. DO NOT DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

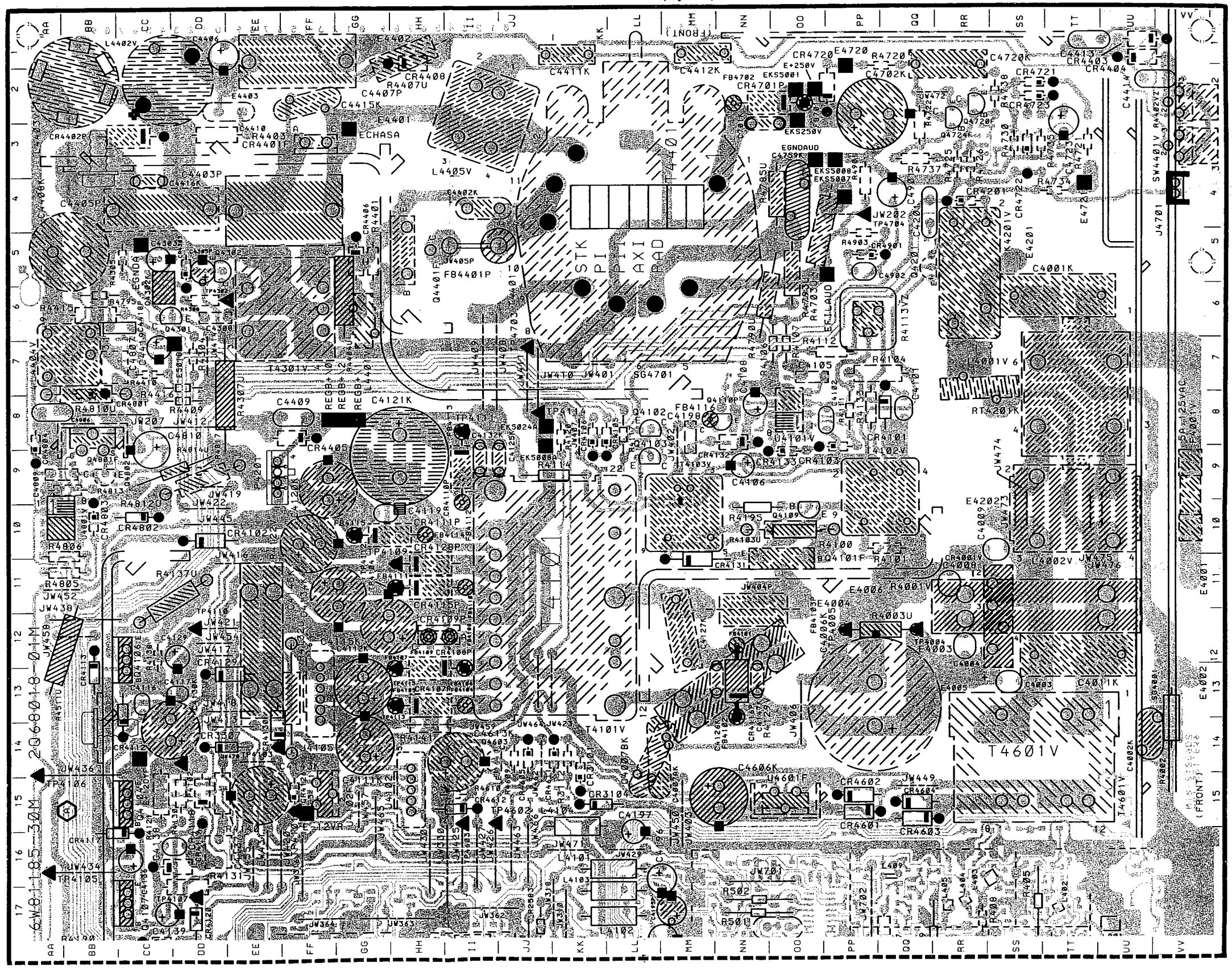
2-C2

2-C3

2-C4

MAIN CIRCUIT BOARD (Top View)



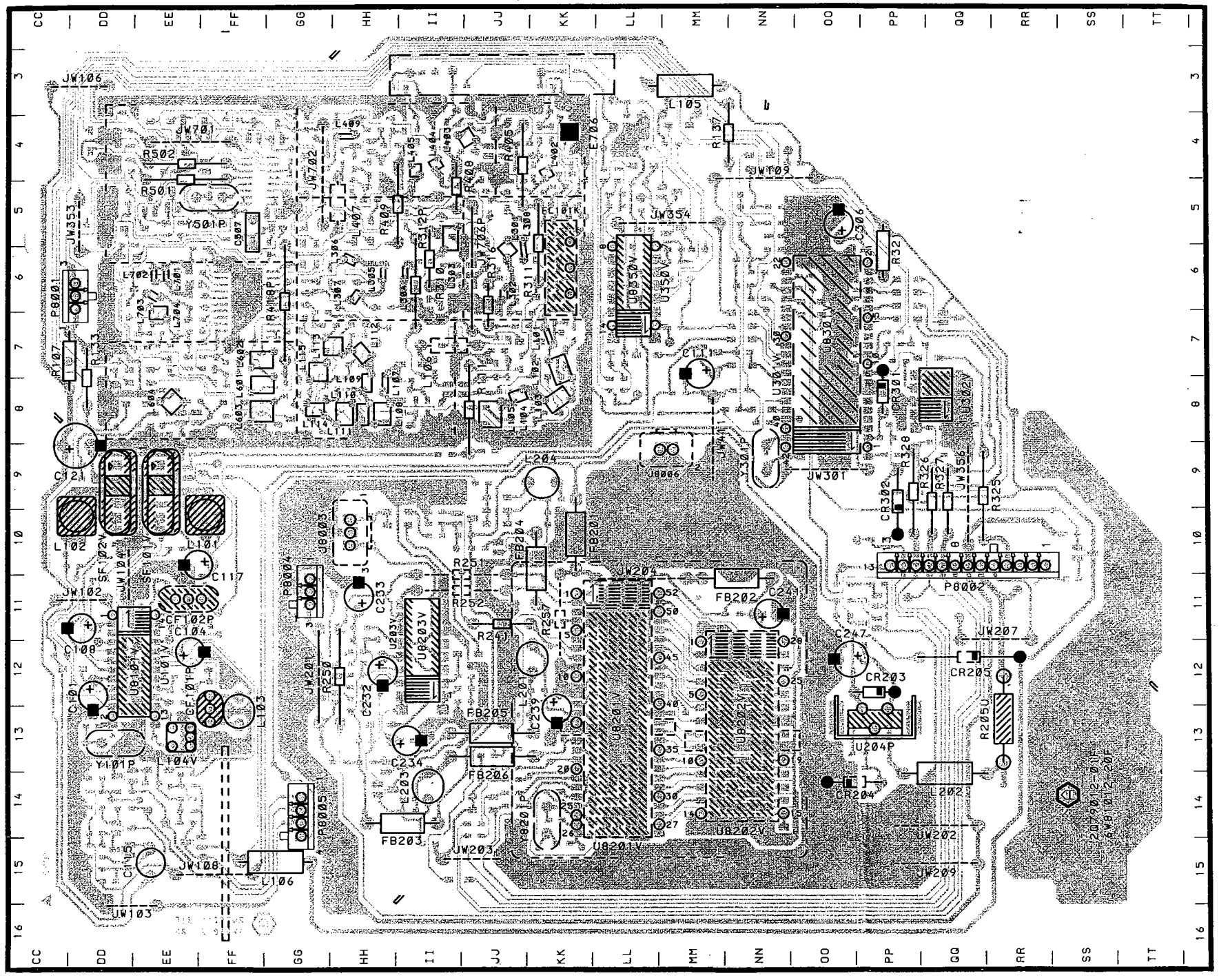


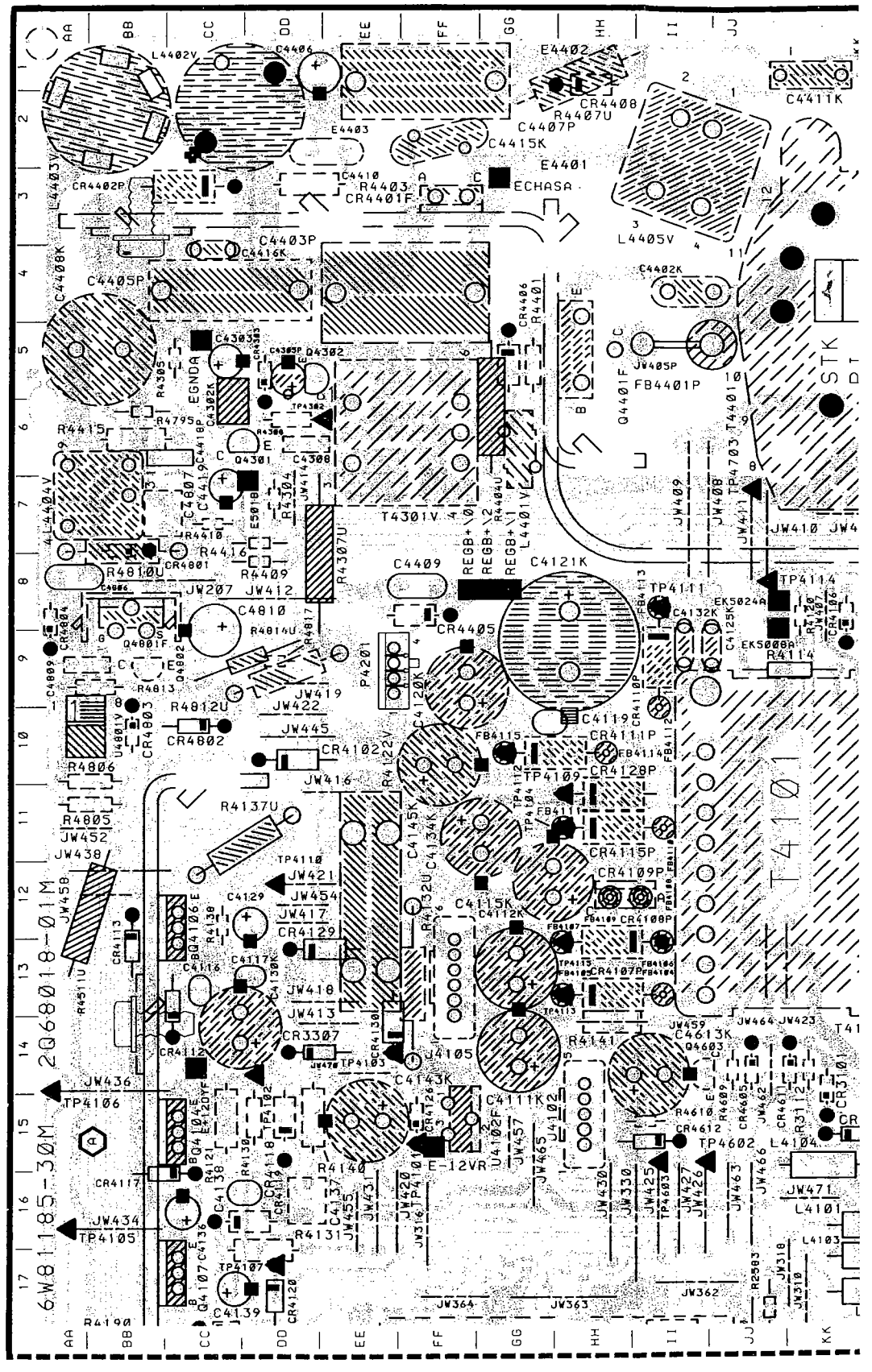
2-C1

2-C2

2-C3

D2T2PIP CIRCUIT BOARD (Top View)



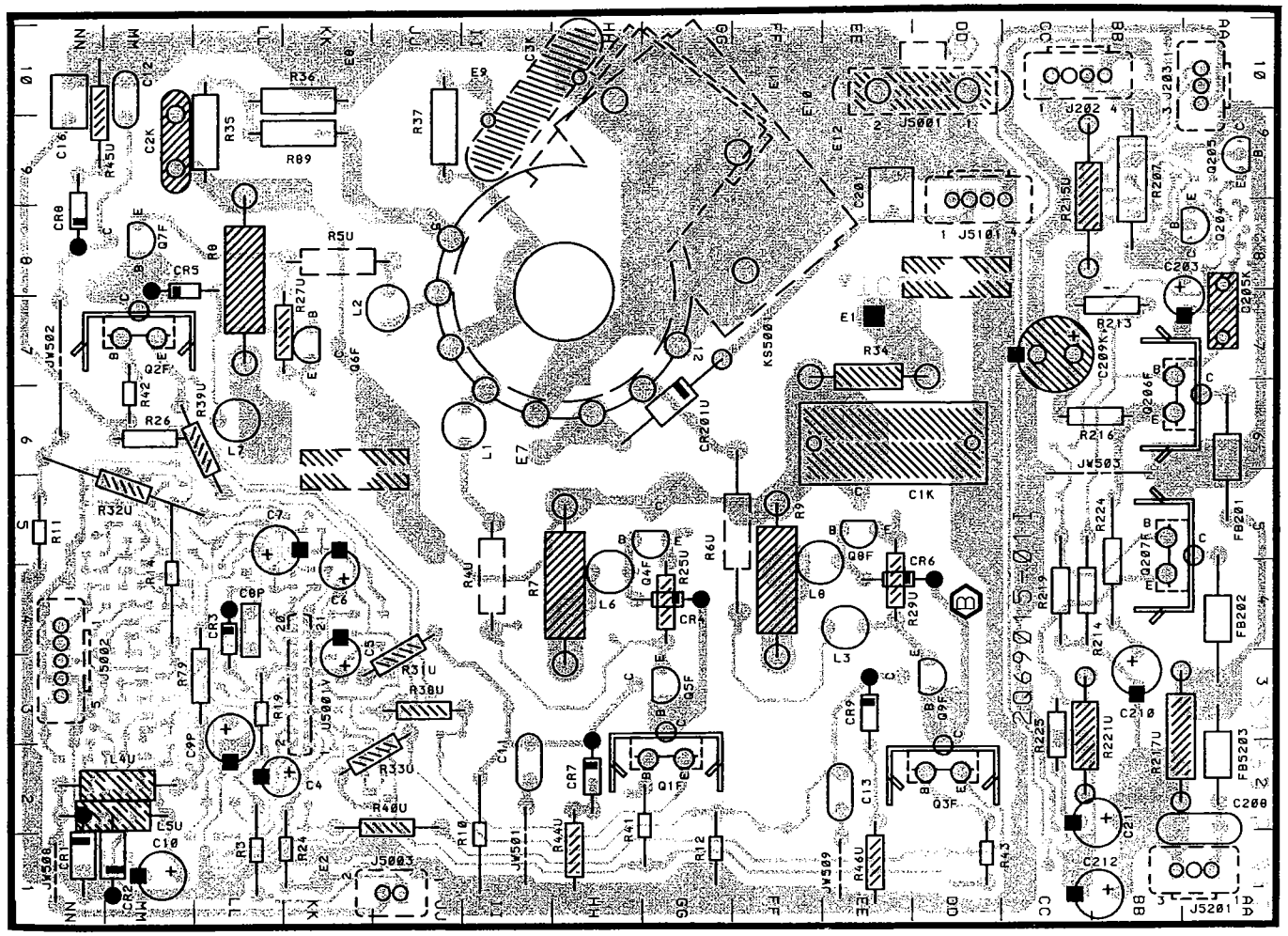


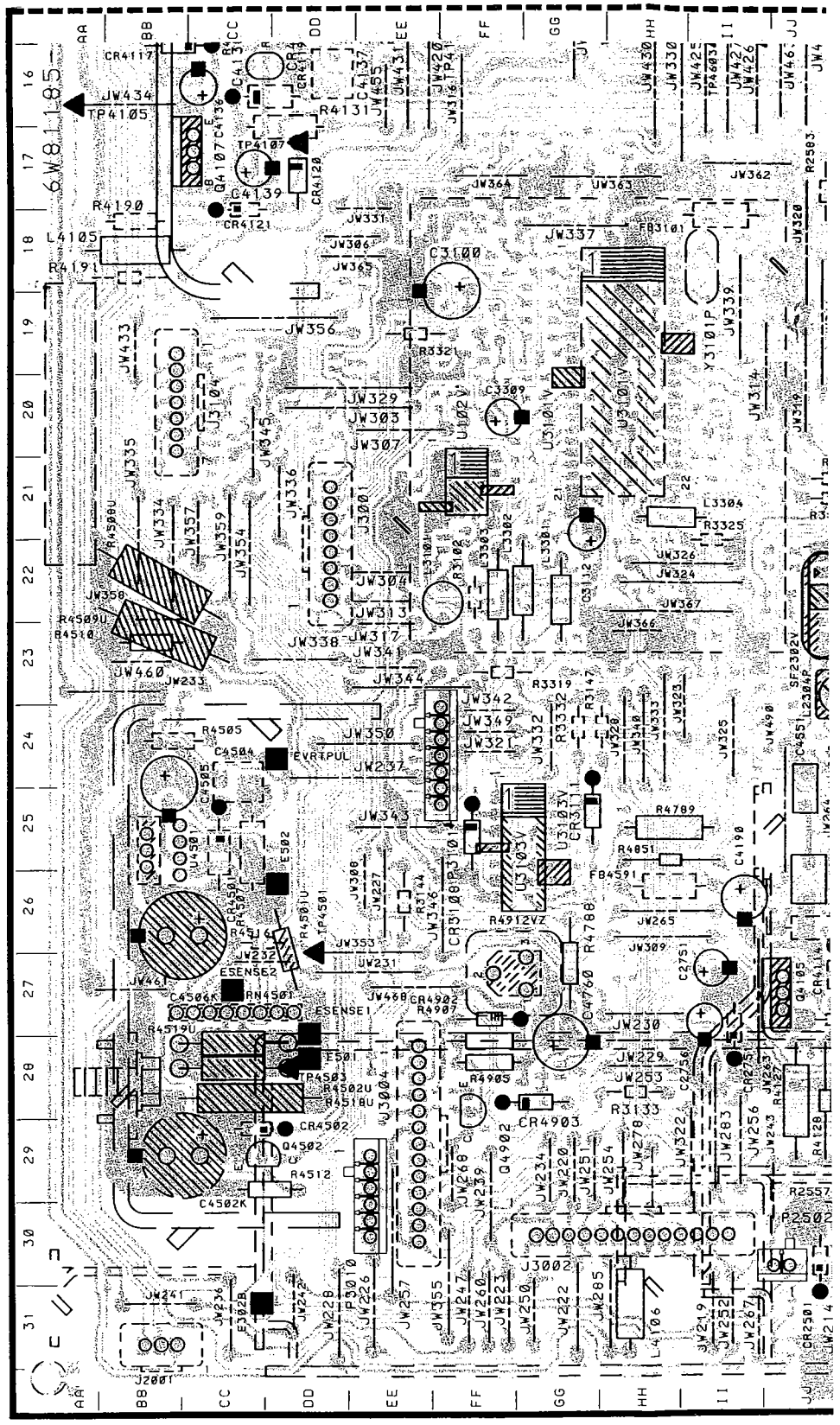
2-D1

2-D2

2-D3

CRT DRIVER CIRCUIT BOARD (Top View)





2-D1

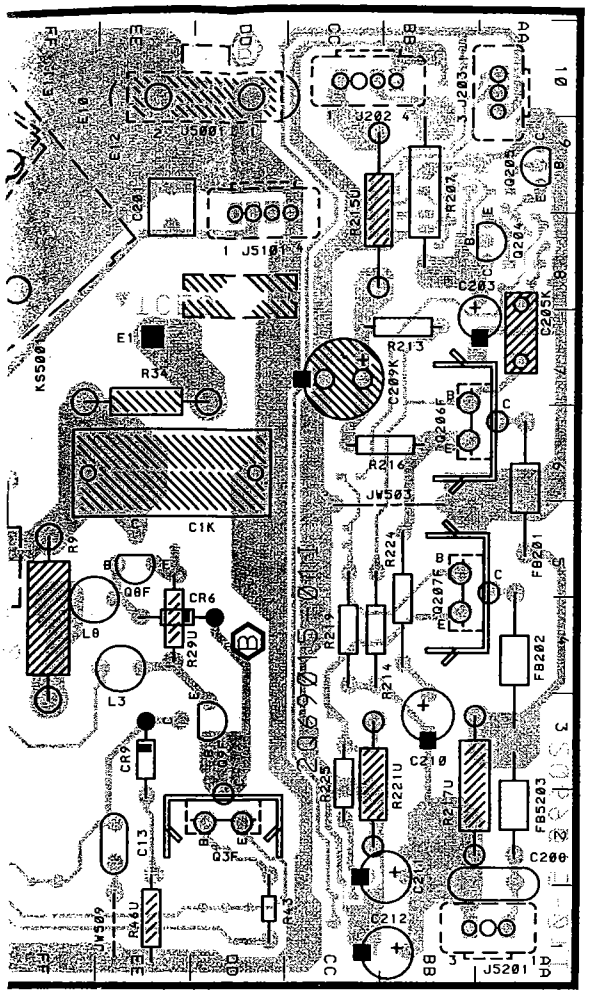
2-D2

2-D5

2-D6

2-D2

(Top View)



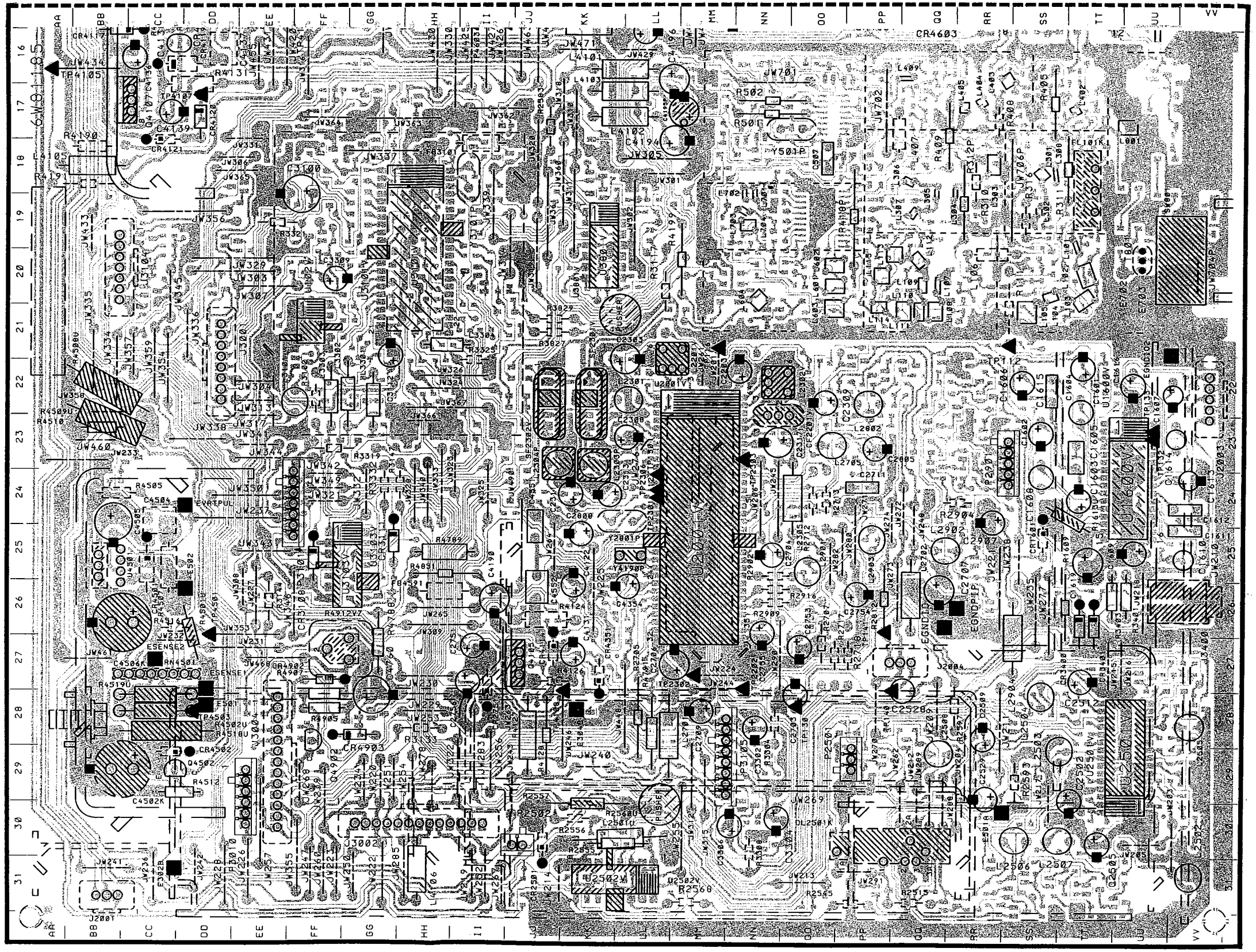
2-D2

2-D6

2-D3

2-D4

MAIN CIRCUIT BOARD (Top View)

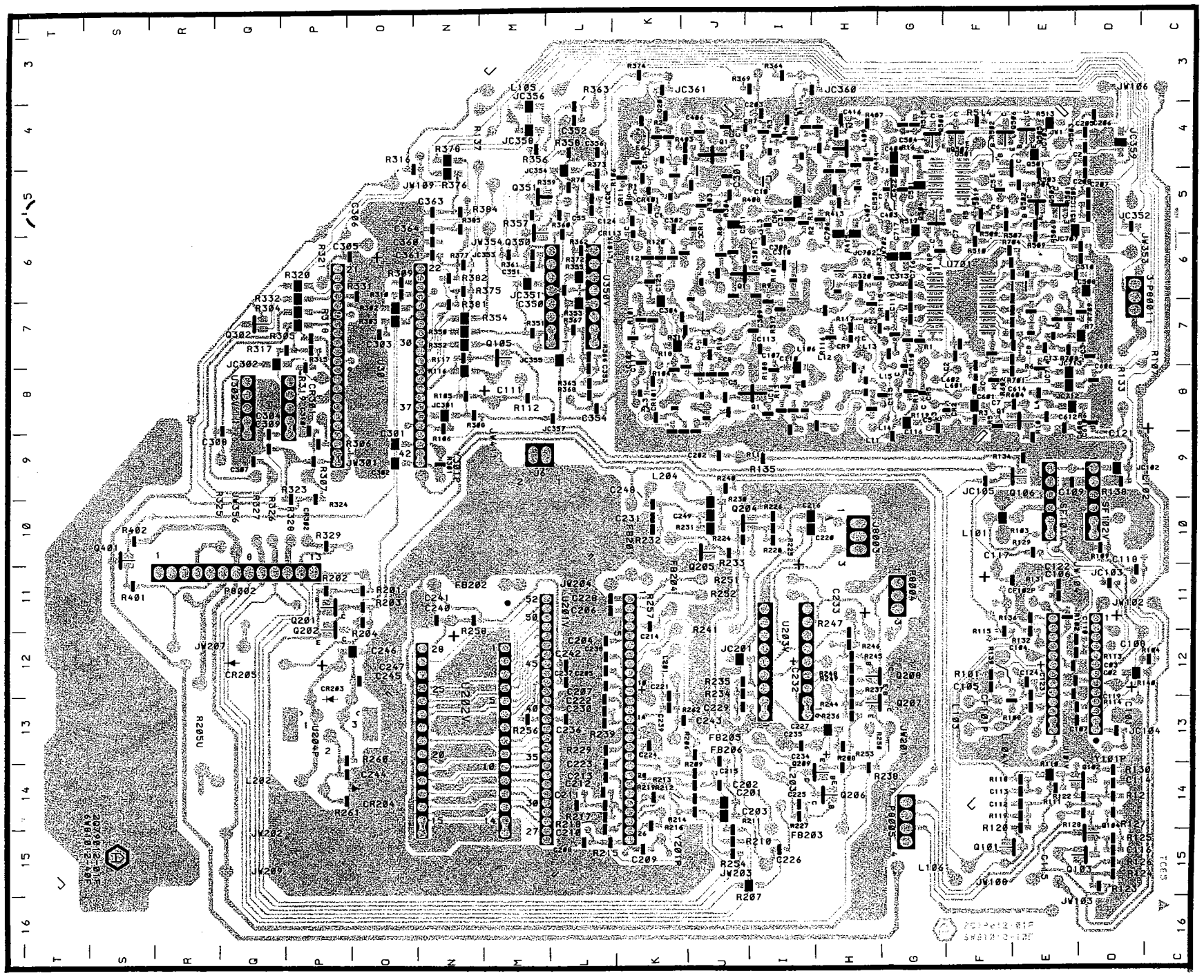


2-H1

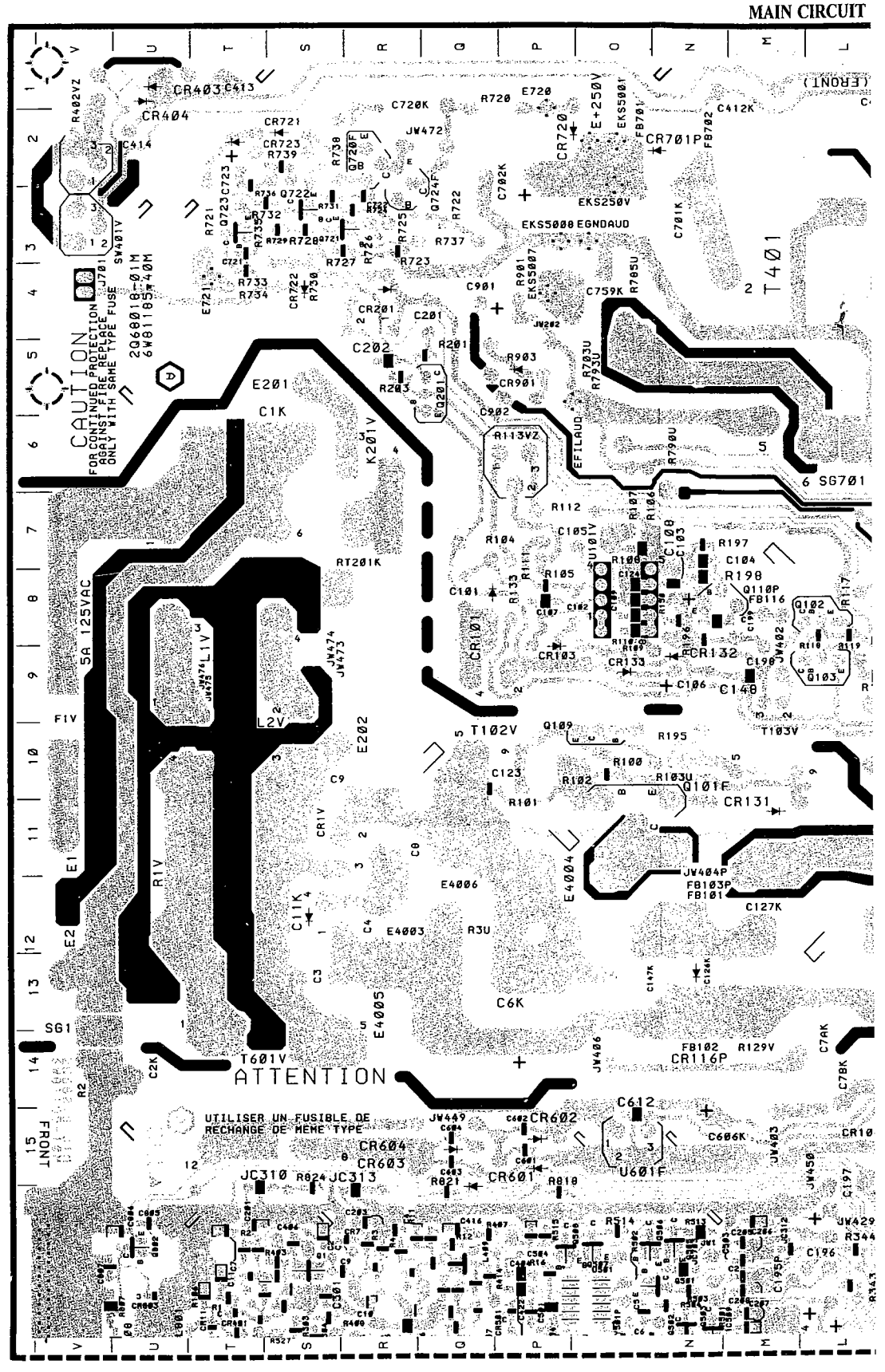
2-H2

2-H3

D2T2PIP CIRCUIT BOARD (Bottom View)



MAIN CIRCUIT

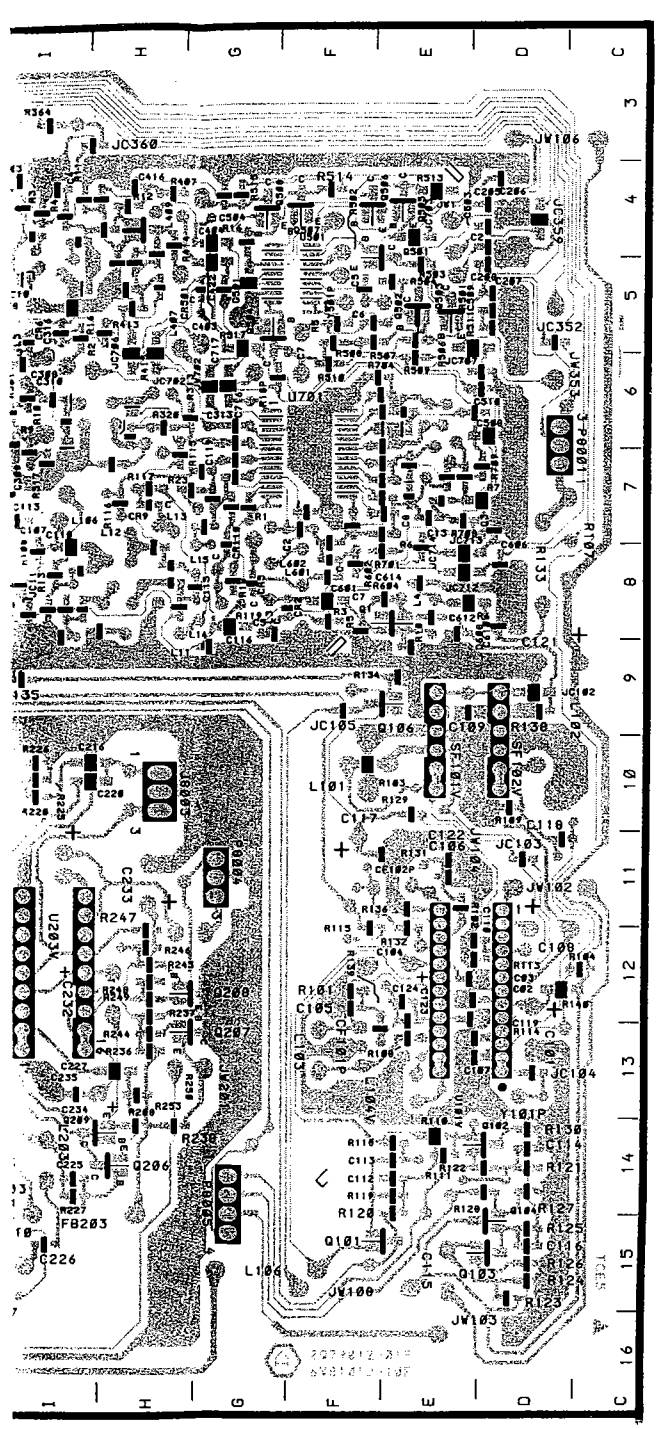


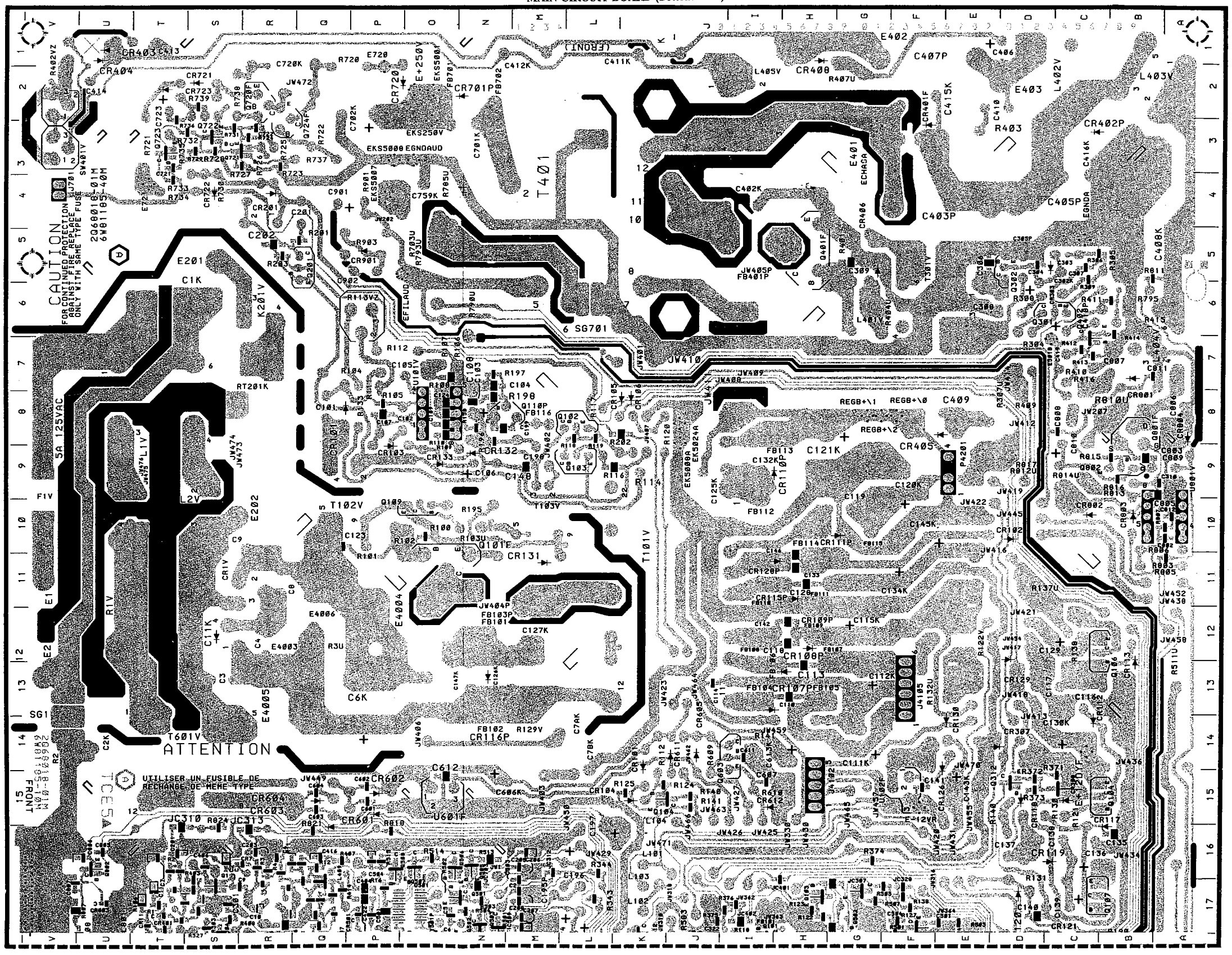
2-H2

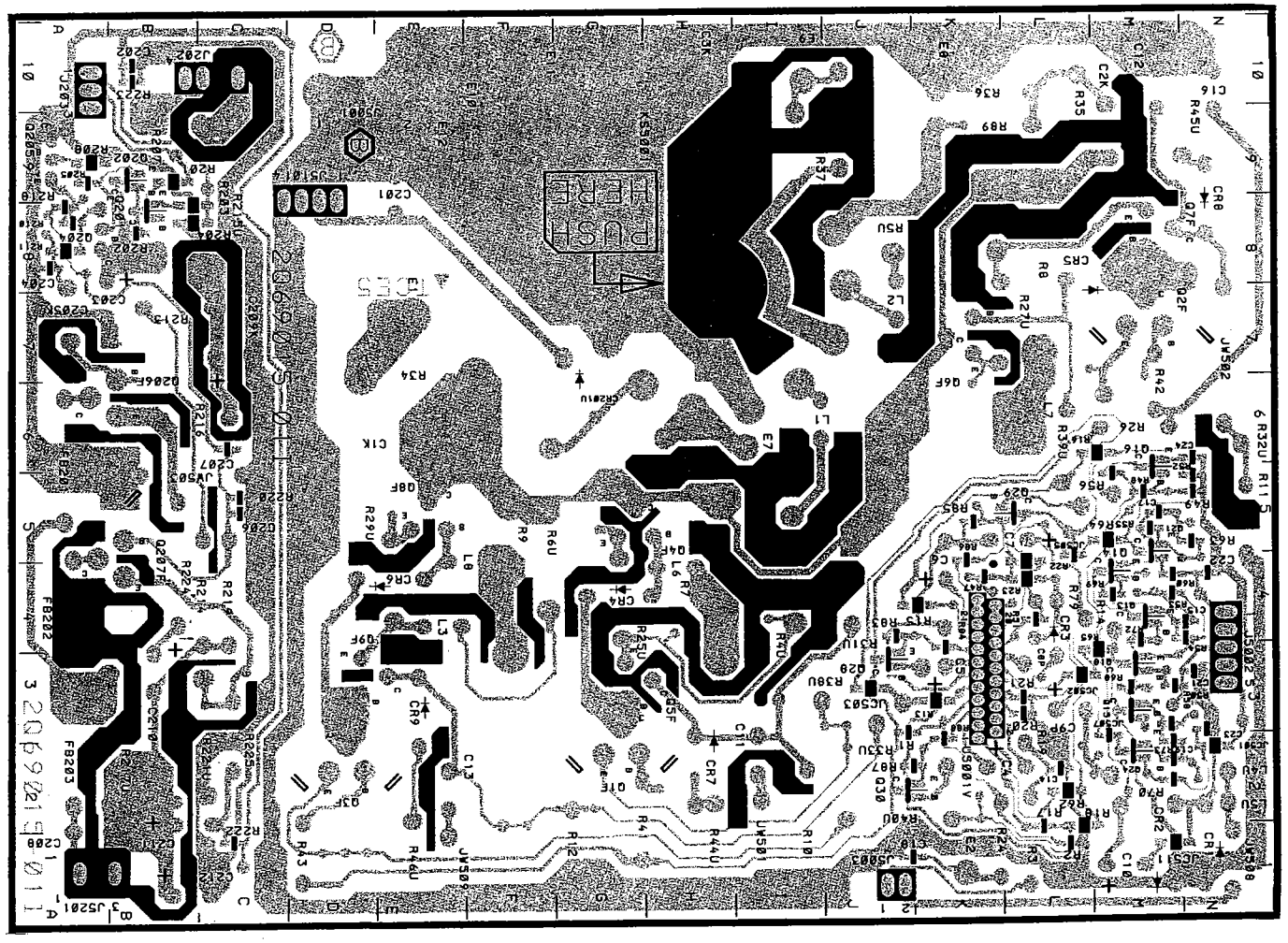
2-H3

2-H4

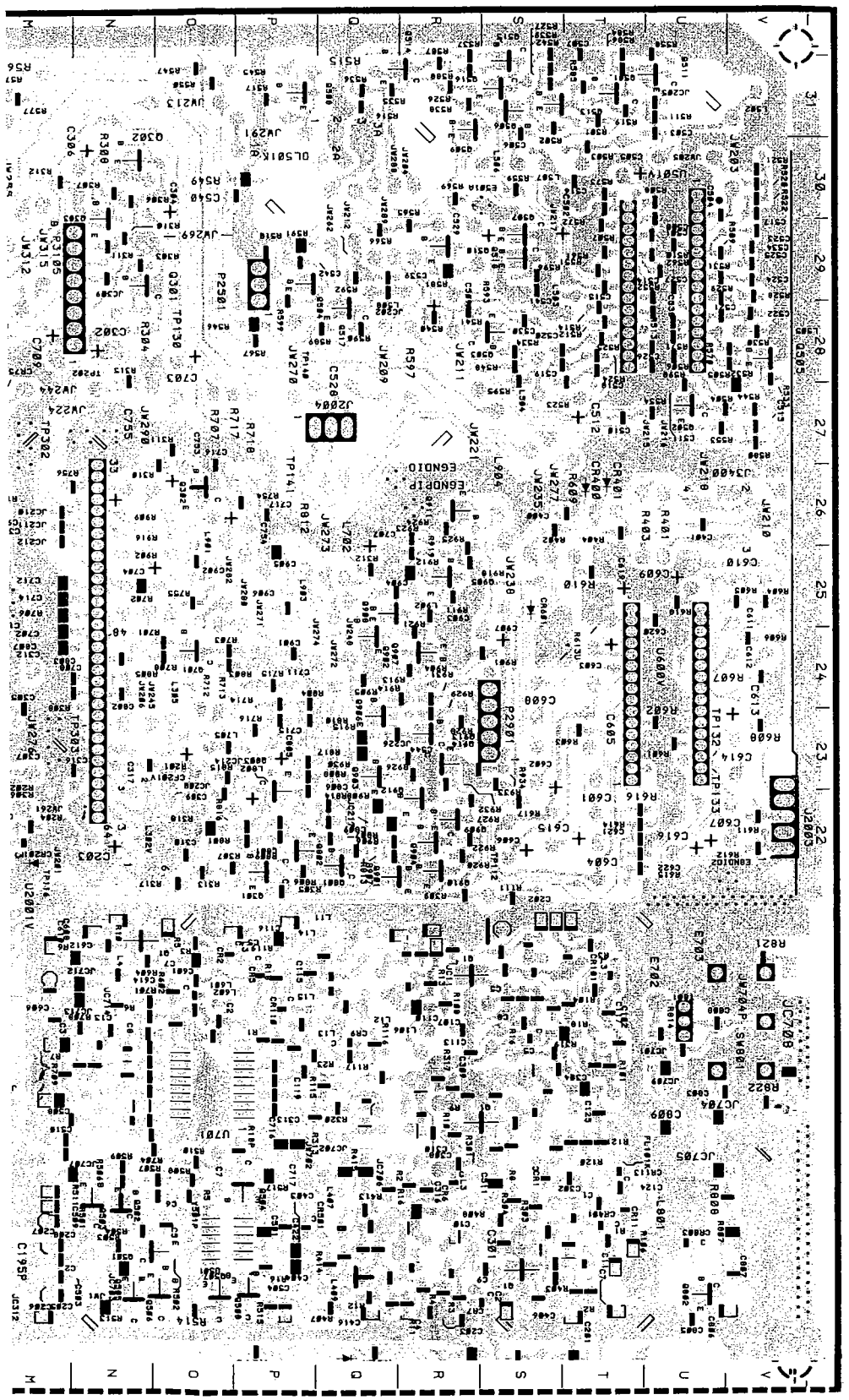
MAIN CIRCUIT BOARD (Bottom View)





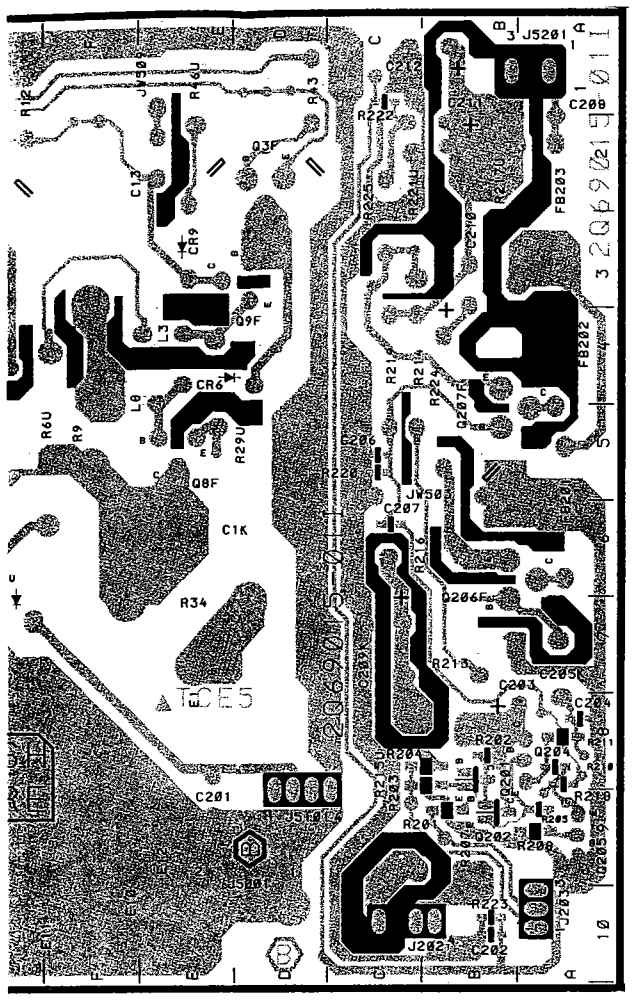


CRT DRIVER CIRCUIT BOARD (Bottom View)



2-I2

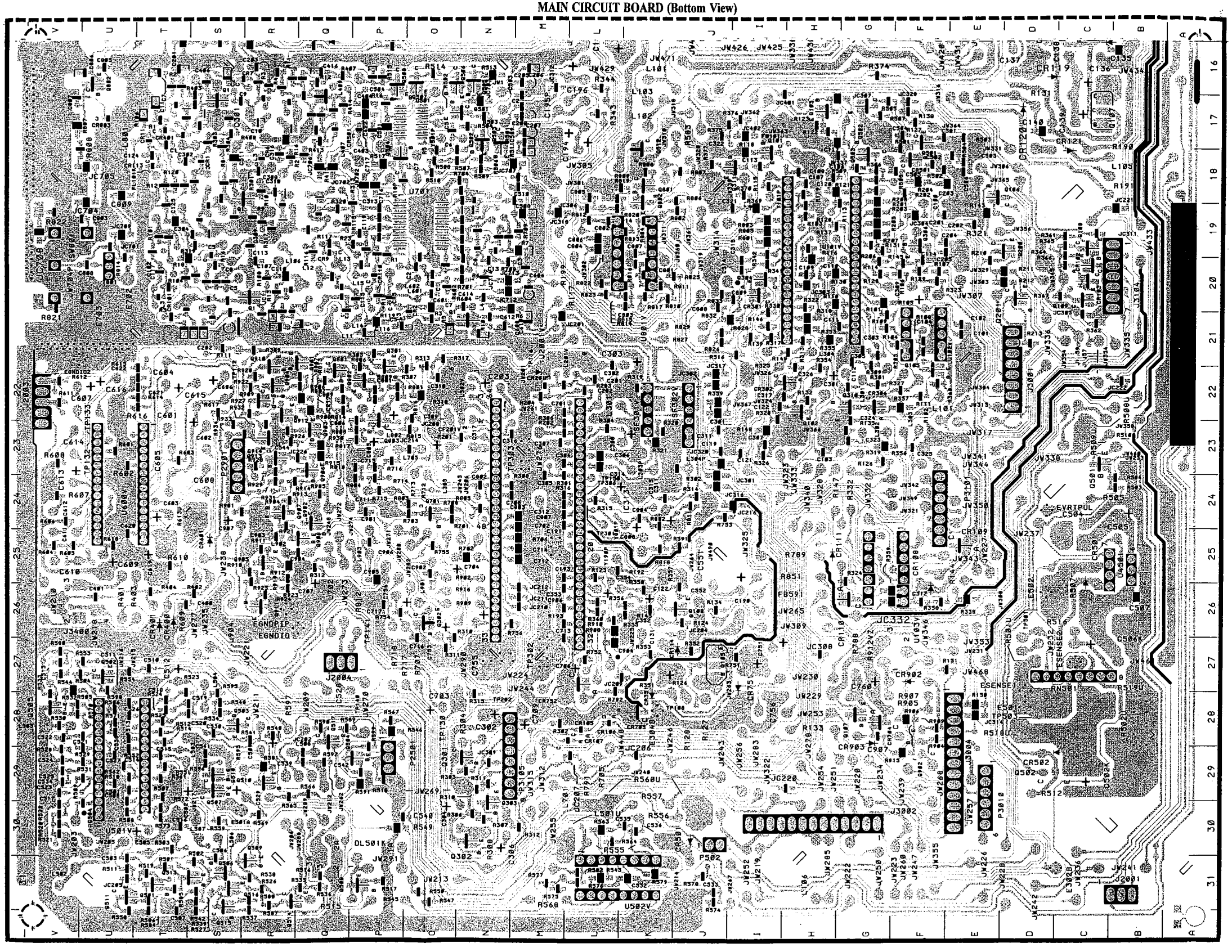
(Bottom View)



2-I3

2-I4

MAIN CIRCUIT BOARD (Bottom View)

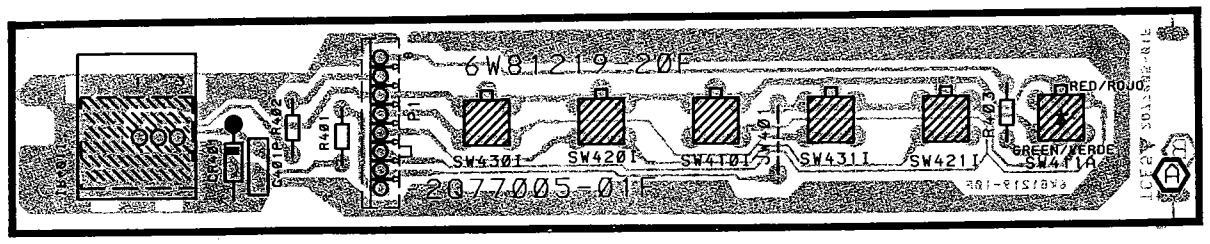


2-I2

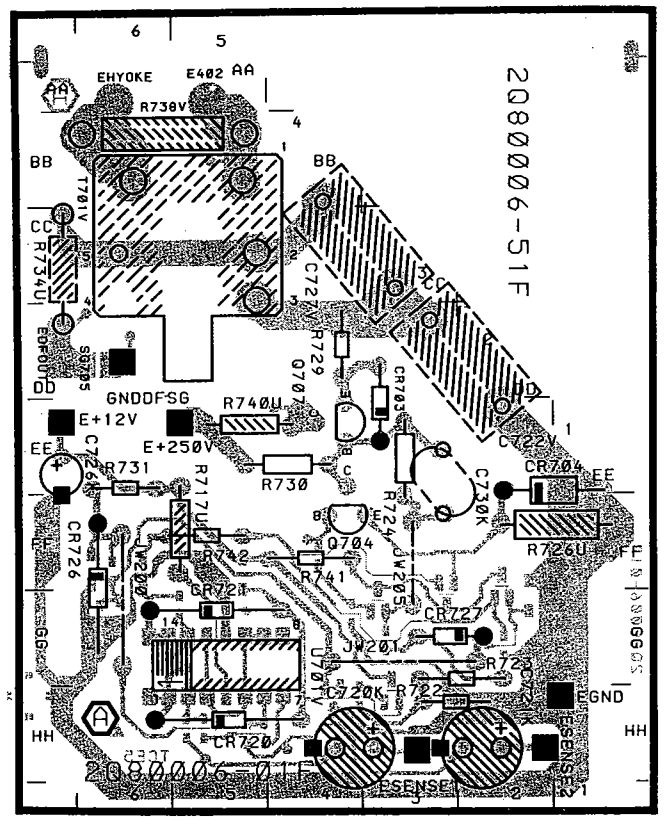
2-I6

2-E1

FRONT PANEL CIRCUIT BOARD



DYN FOCUS CIRCUIT BOARD (Top View)



2-E1

2-E5

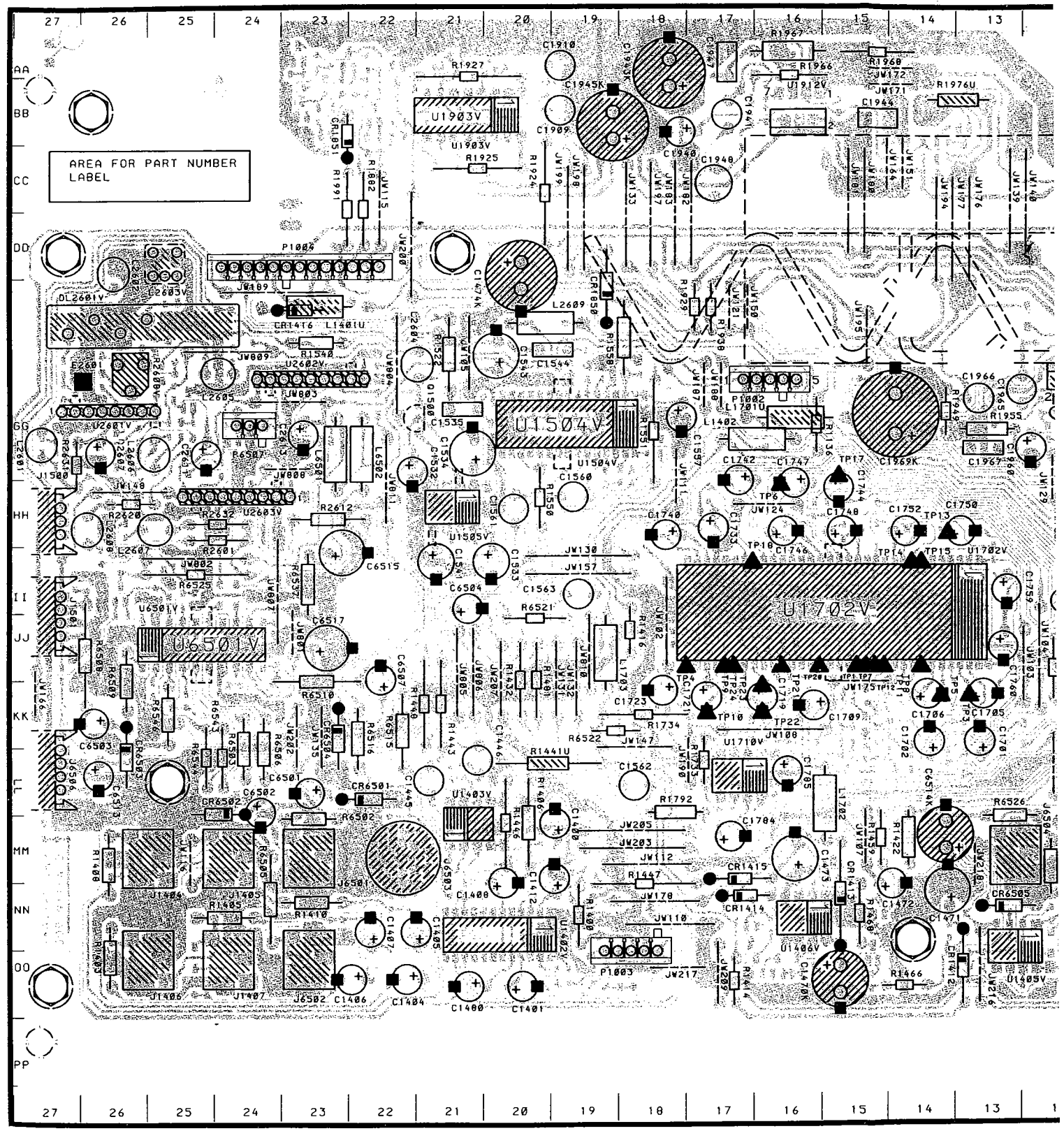
2-E2

2-E6

2-E2

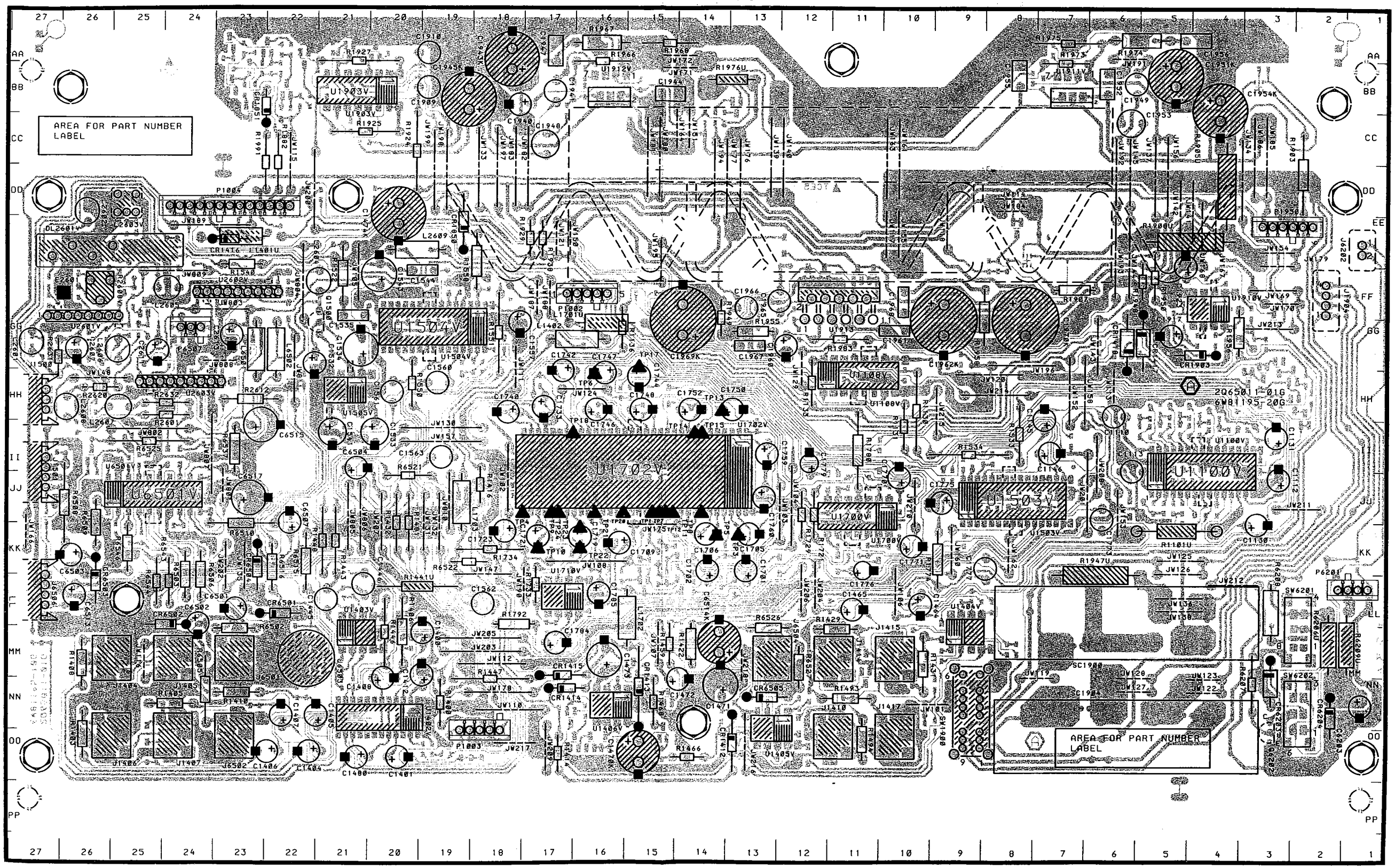
2-E3

IN/OUT CIRCUIT BOARD (Top View)



2-E2 2-E3 2-E4

IN/OUT CIRCUIT BOARD (Top View)

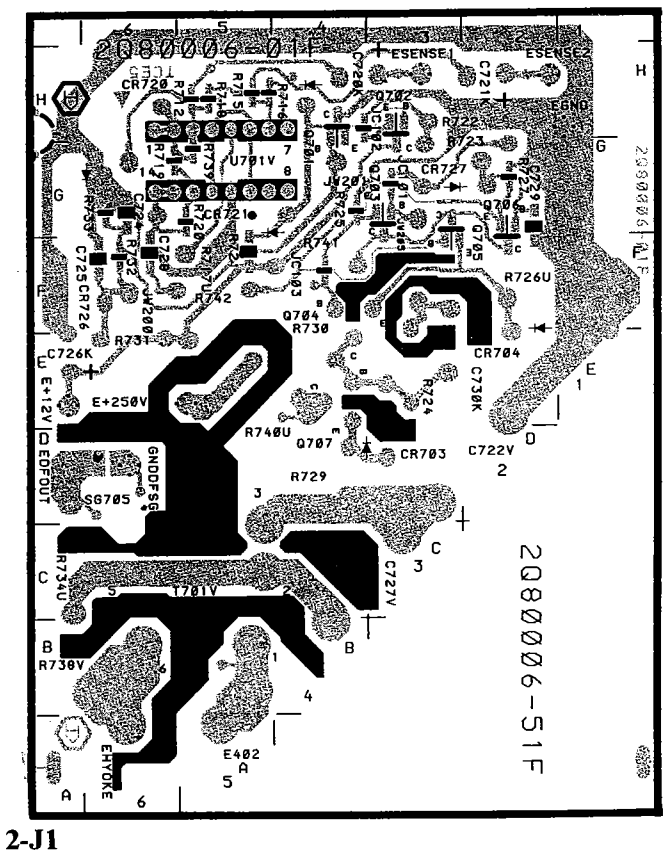


2-J1

2-J2

2-J3

DYN FOCUS CIRCUIT BOARD (Bottom View)



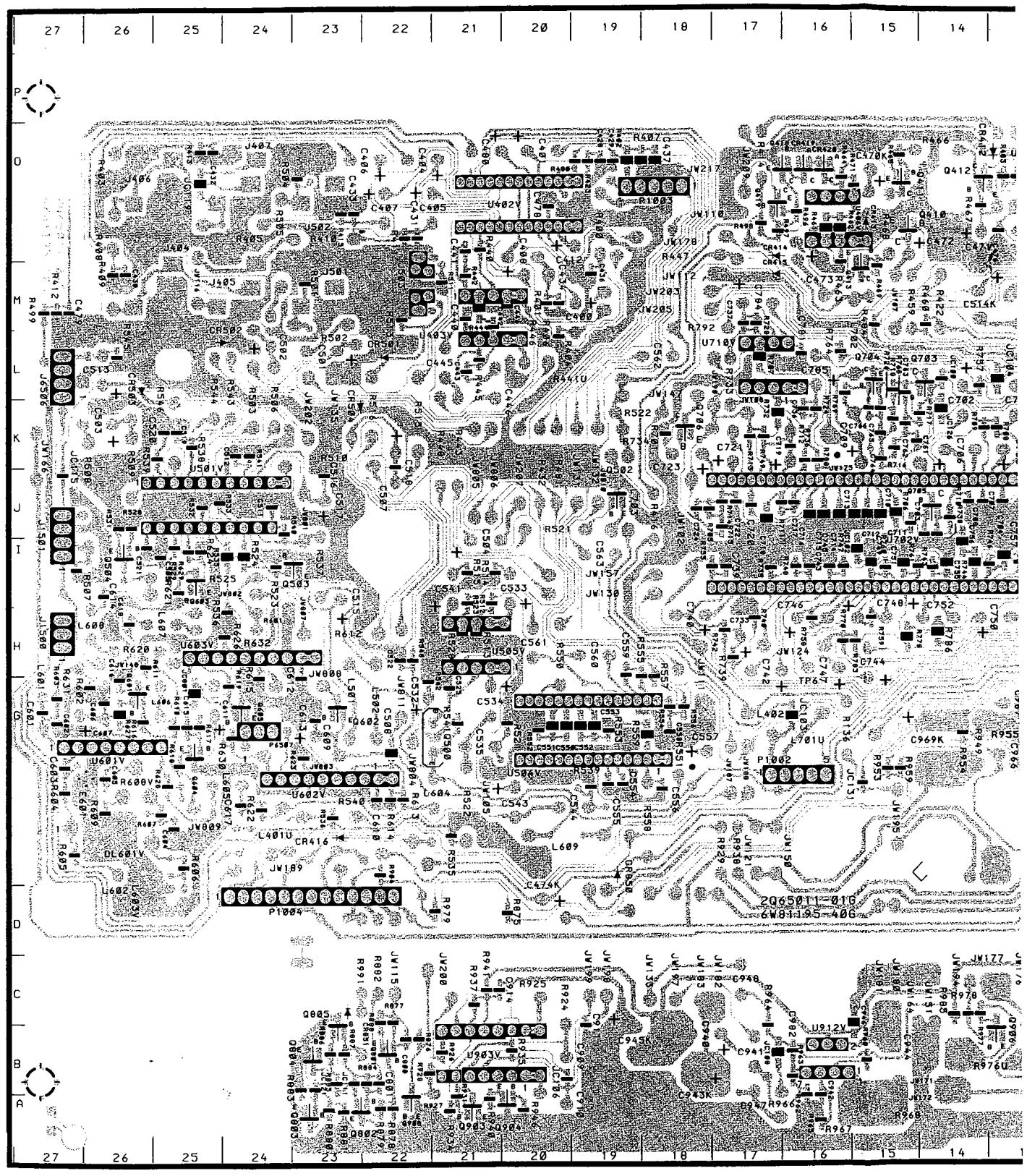
2-J1

2-J5

2-J2

2-J6

IN/OUT CIRCUIT BOARD (Bott

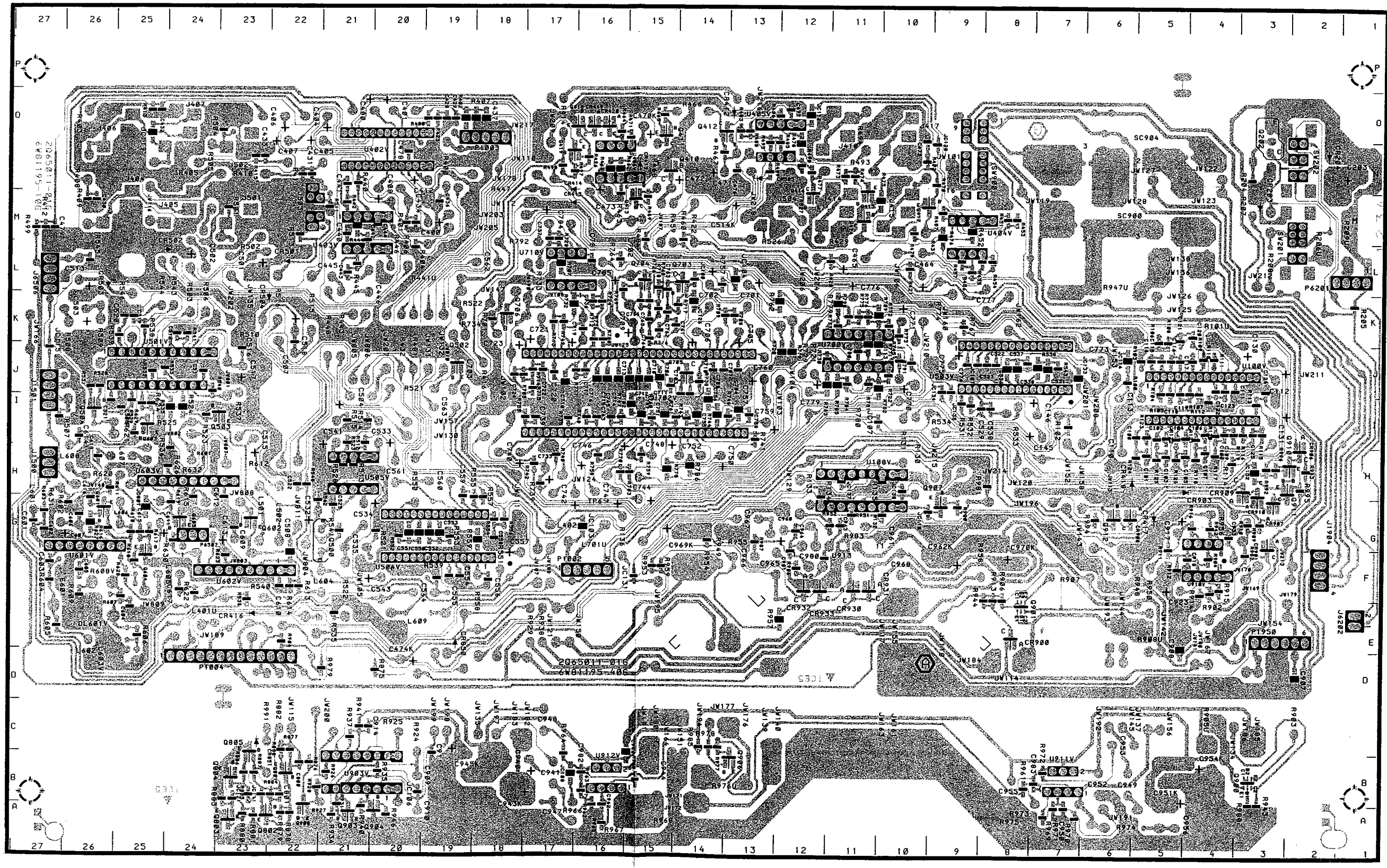


2-J2

2-J3

2-J4

IN/OUT CIRCUIT BOARD (Bottom View)



2-J2

2-J6

PART OF U3101
SYSTEM CONTROL

VERT
HORIZ
25
24

Q3304
BUFFER

<SYM>

T4701
3
2
1
6

<VERT>

Q4501
BUFFER

U4501
VERT OUT
FB GEN
3
5
1
7

Q4707
CURRENT
SOURCE

Q4703,Q4704
Q4705,Q4706
DIFF AMP

Q4702
BUFFER

VERT
YOKE

PART OF
U4701
AMP
14
13
1
2
7
6

RN4501

<HORIZ>

<BEAM>
6
5
7

REG B+
8
12

CR4701
RECTIFIER
2

T4401
IHVT
10
11

Q4401
HORIZ
OUT

T4301
DRIVER
5
3
6
1

Q4302
DRIVER

Q4301
SWITCH

U4801
PIN AMP
7
2

Q4801
PIN
SWITCH

L4404

R4402
SW4401
CENTERING

HORIZ
YOKE

Q4802
RAMP GEN

Q4902
X-RAY
SWITCH

28
26

PART OF U2001
DEFLECTION

HORIZ
OUT

APC

HORIZ
COUNTDOWN

SYNC
SEP

<SEL Y>
44

<SANDCASTLE>
29
27

VERT
COUNTDOWN

VERT
RAMP

PARABOLA
GENERATOR

21

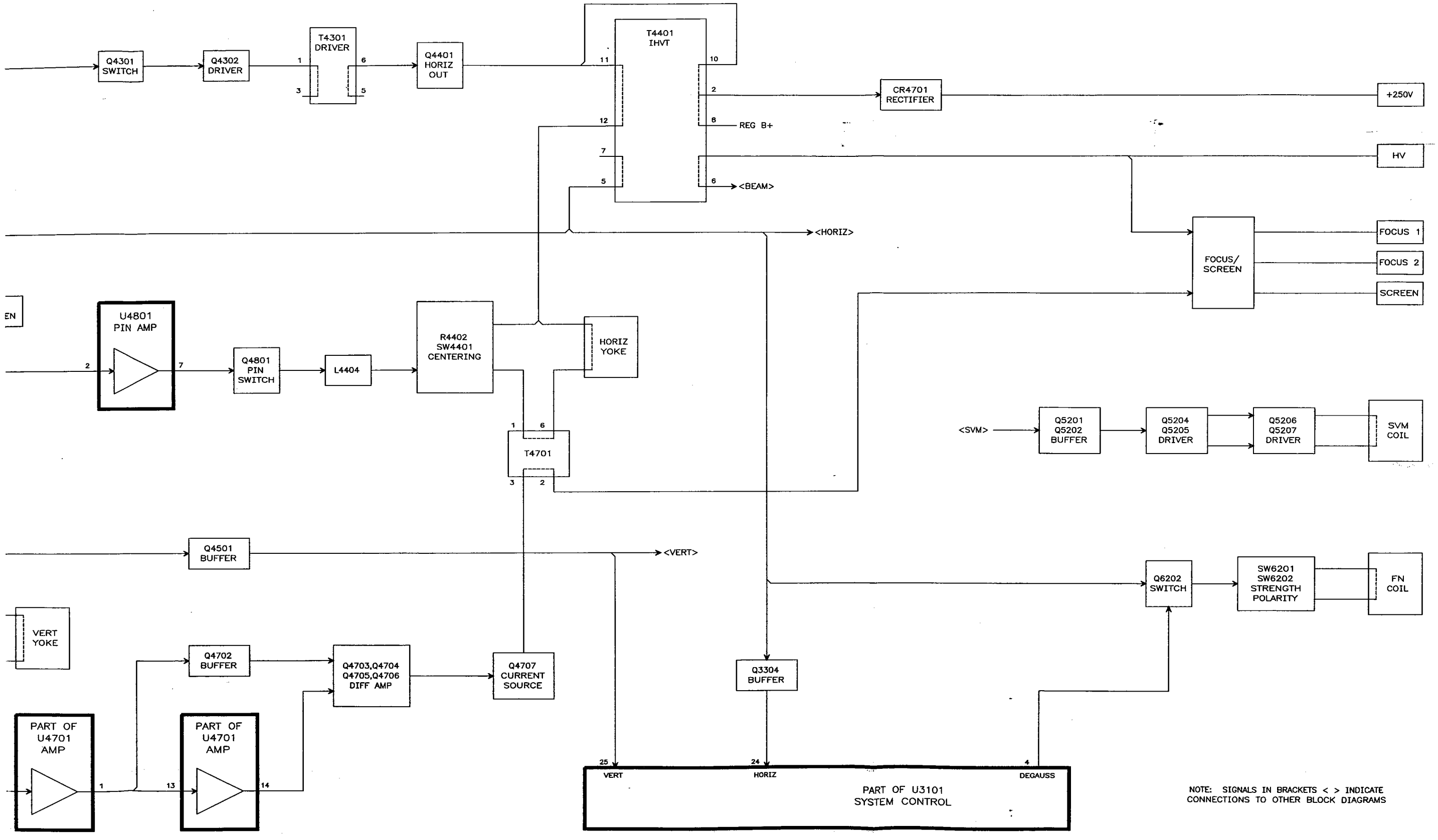
VERT
SIZE

19

DEFLECTION BLOCK DIAGRAM

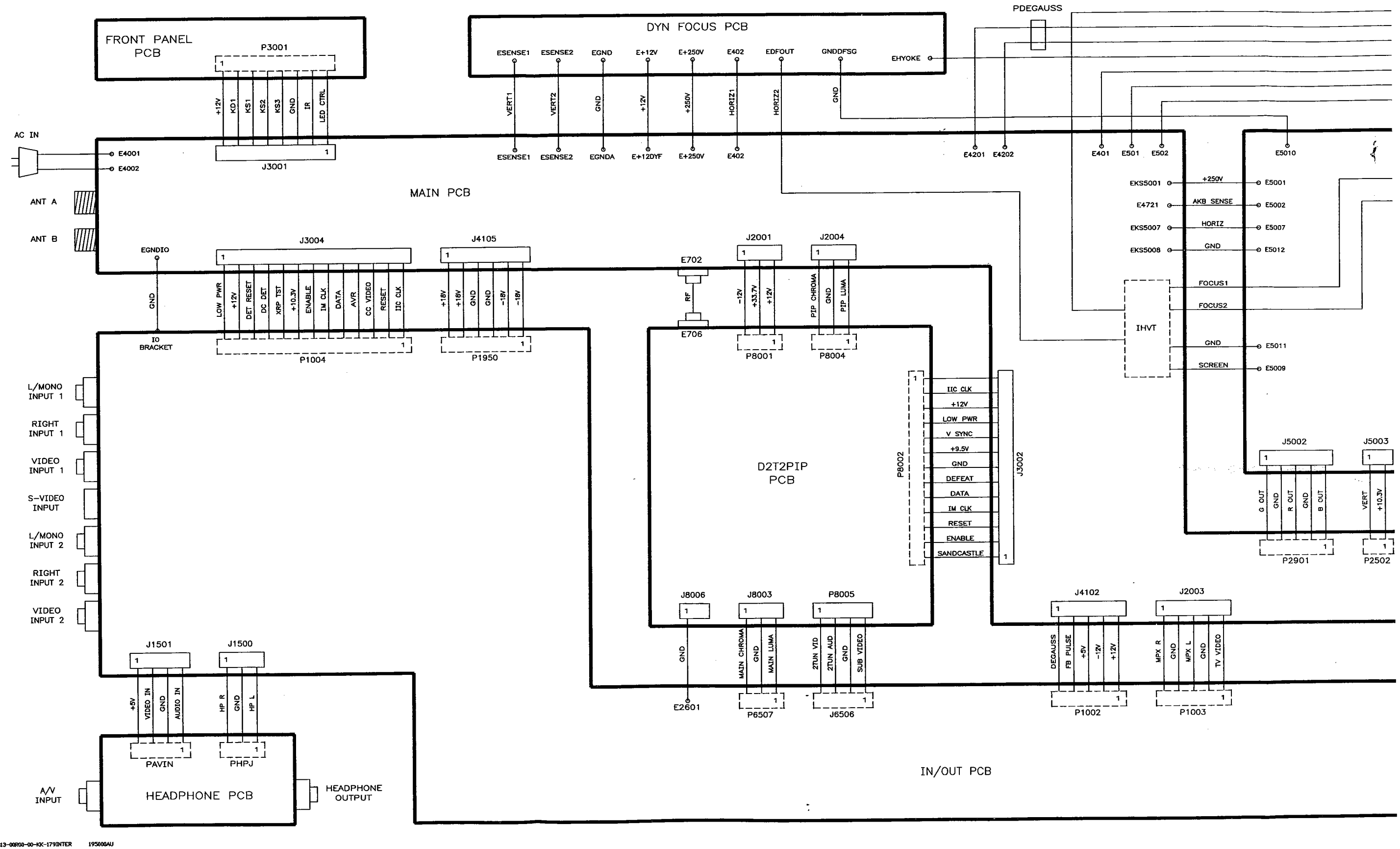
CTC179

DEFLECTION BLOCK DIAGRAM



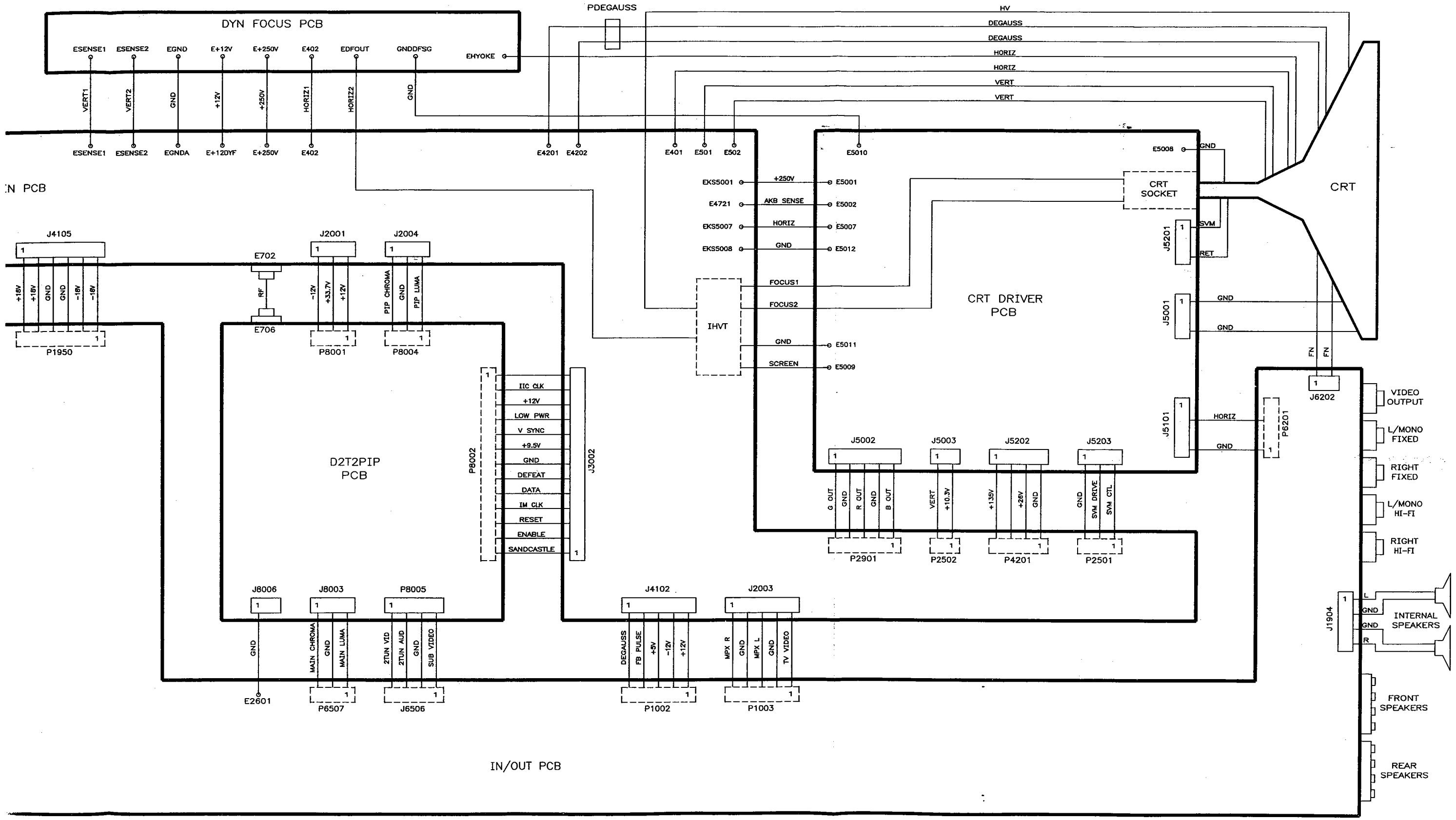
NOTE: SIGNALS IN BRACKETS < > INDICATE CONNECTIONS TO OTHER BLOCK DIAGRAMS

INTERCONNECT WIRING DIAGRAM

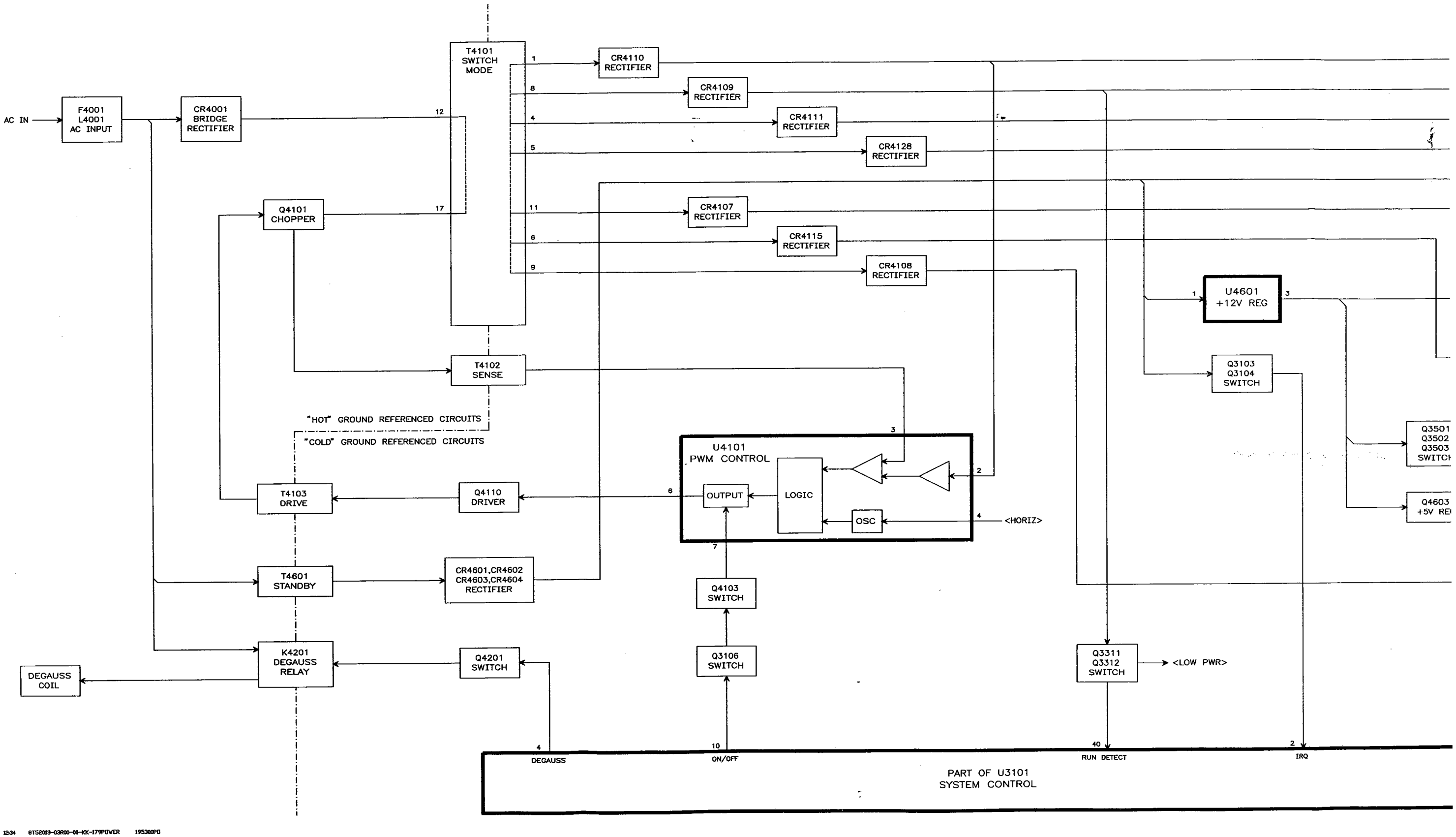


03/20/95 1223 6TS2013-00R00-00-KK-179INTER 195000AU

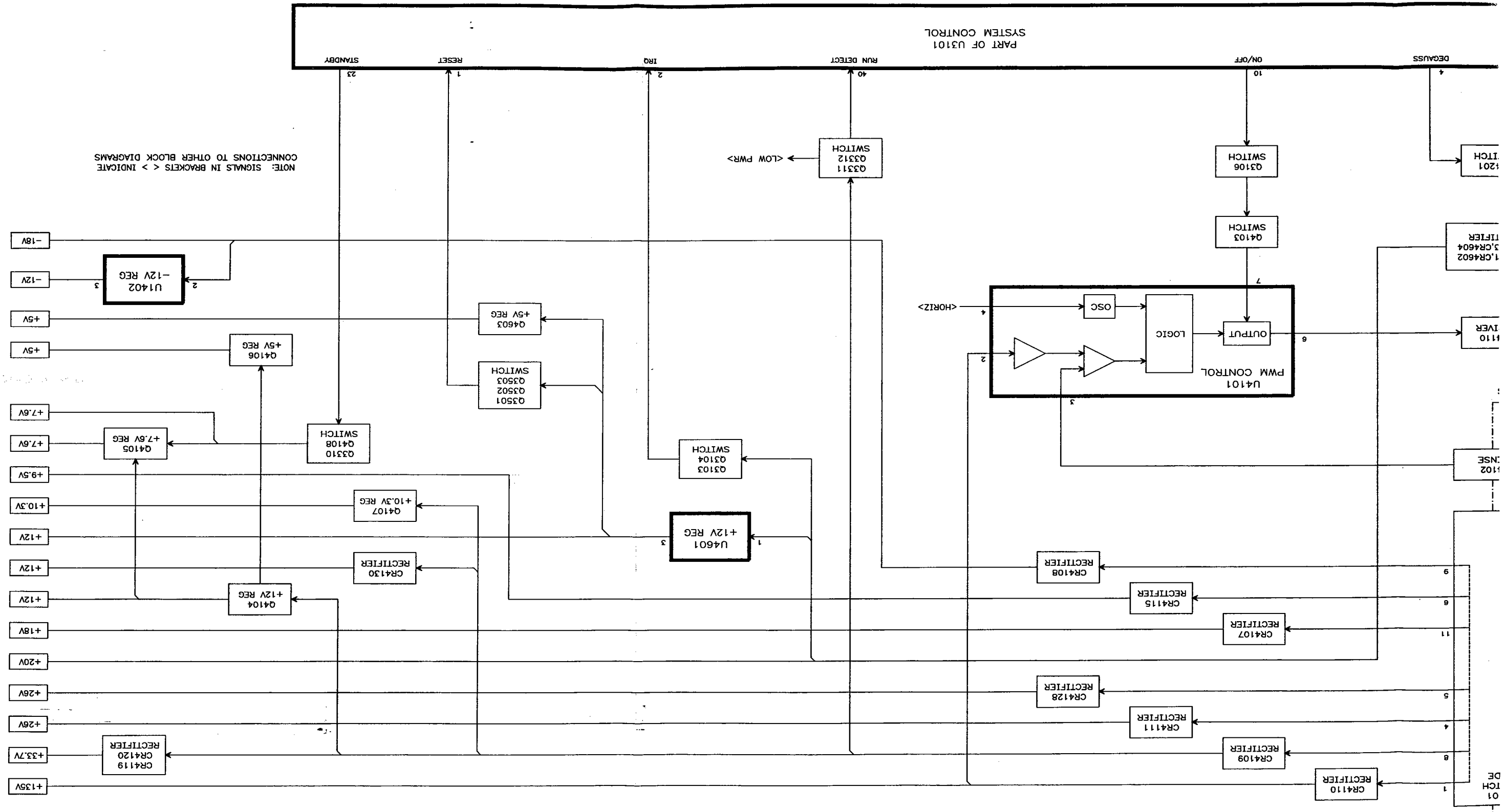
INTERCONNECT WIRING DIAGRAM



POWER SUPPLY BLOCK DIAGRAM

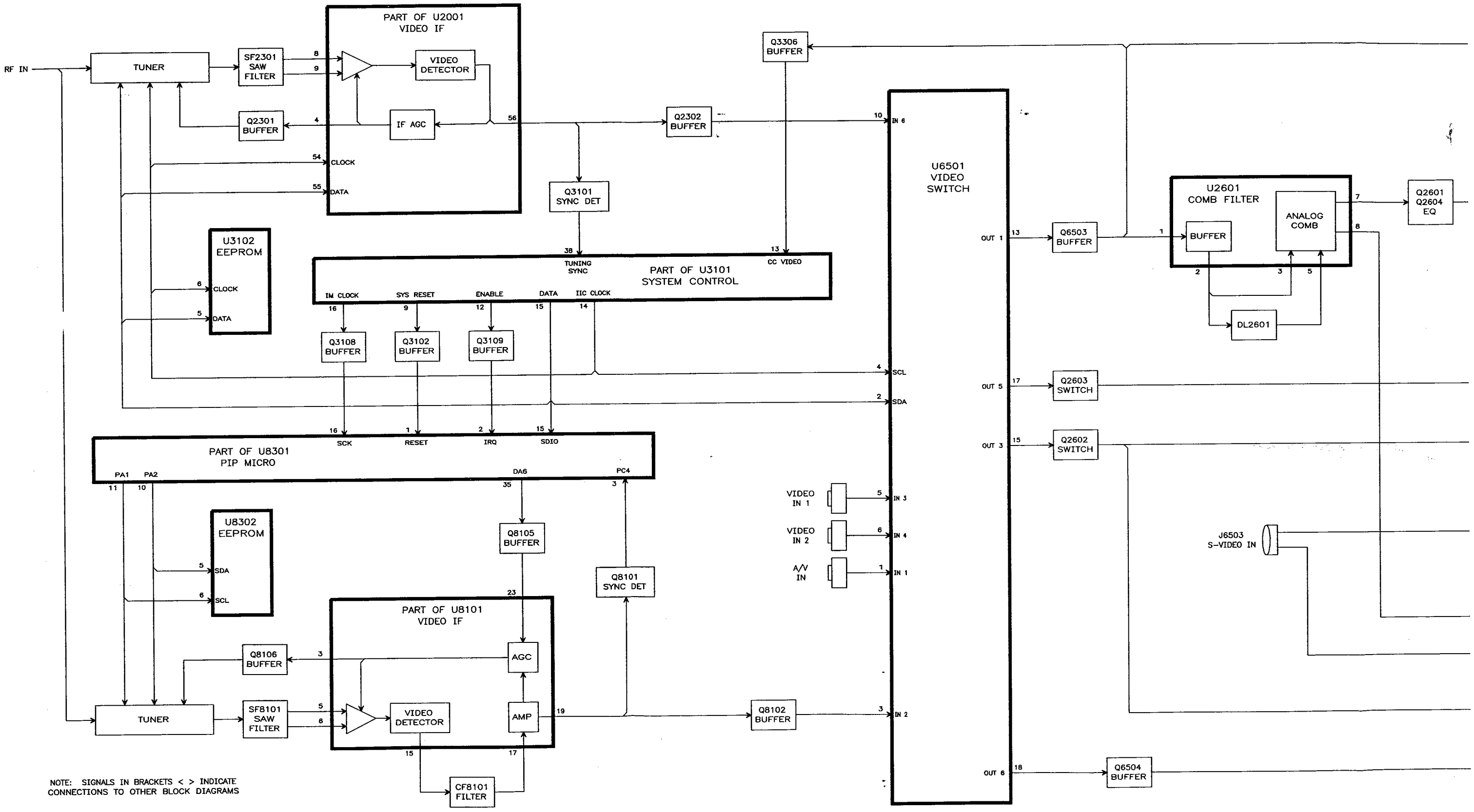


03/28/95 12:34 8T52013-03R00-00-KK-179POWER 195300PO

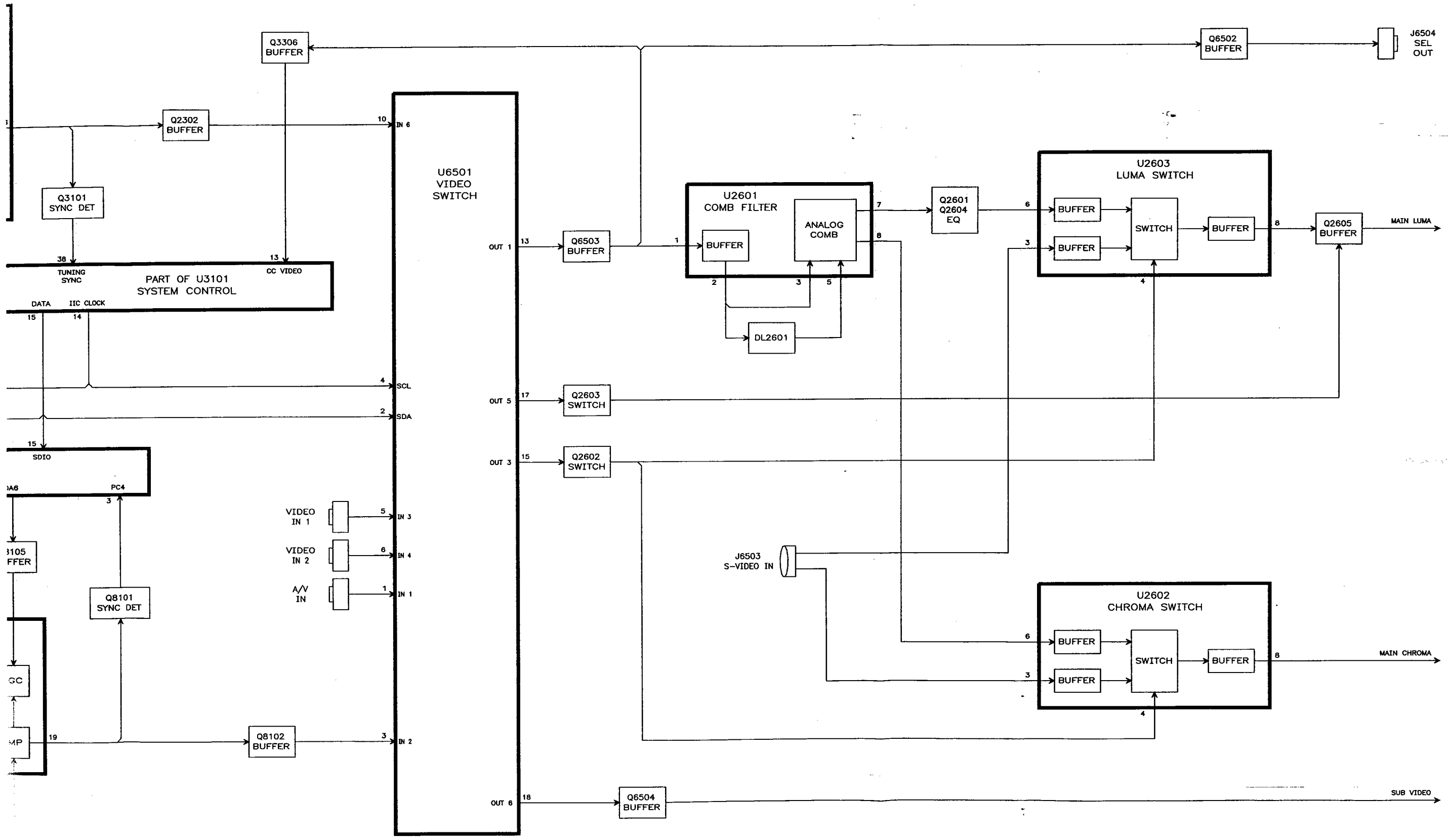


POWER SUPPLY BLOCK DIAGRAM

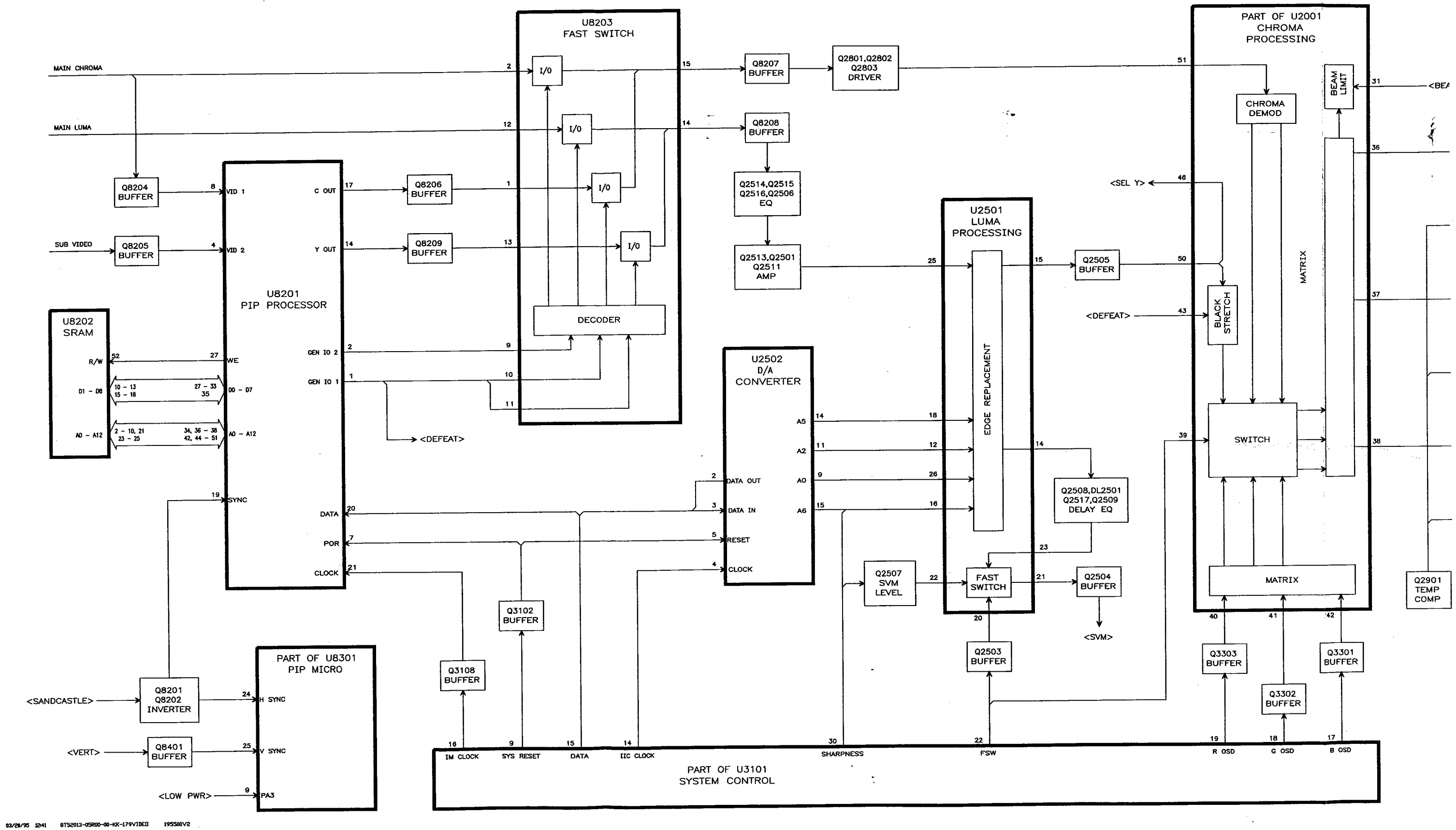
VIDEO BLOCK DIAGRAM (1 OF 2)



VIDEO BLOCK DIAGRAM (1 OF 2)

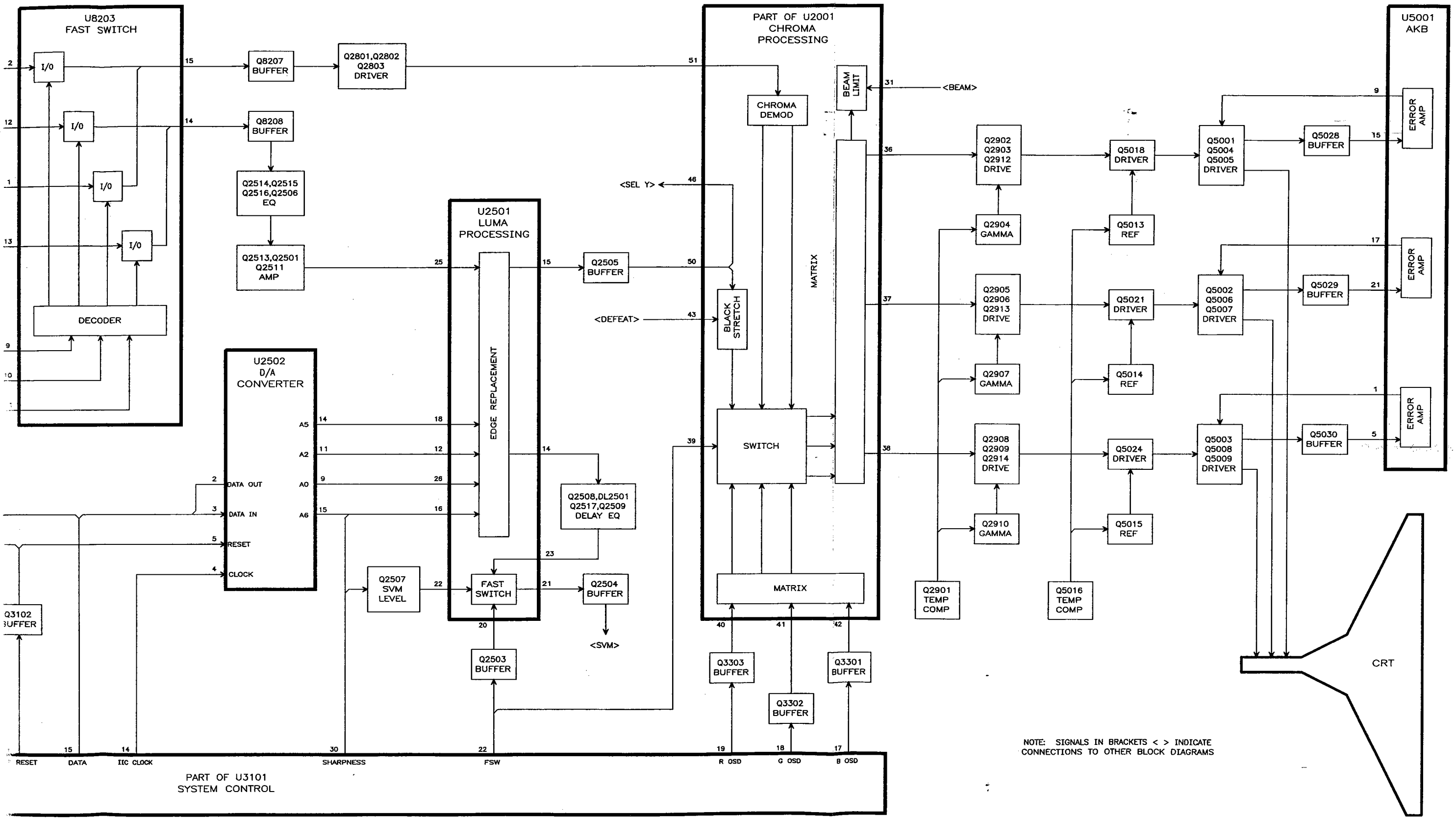


VIDEO BLOCK DIAGRAM (2 of 2)



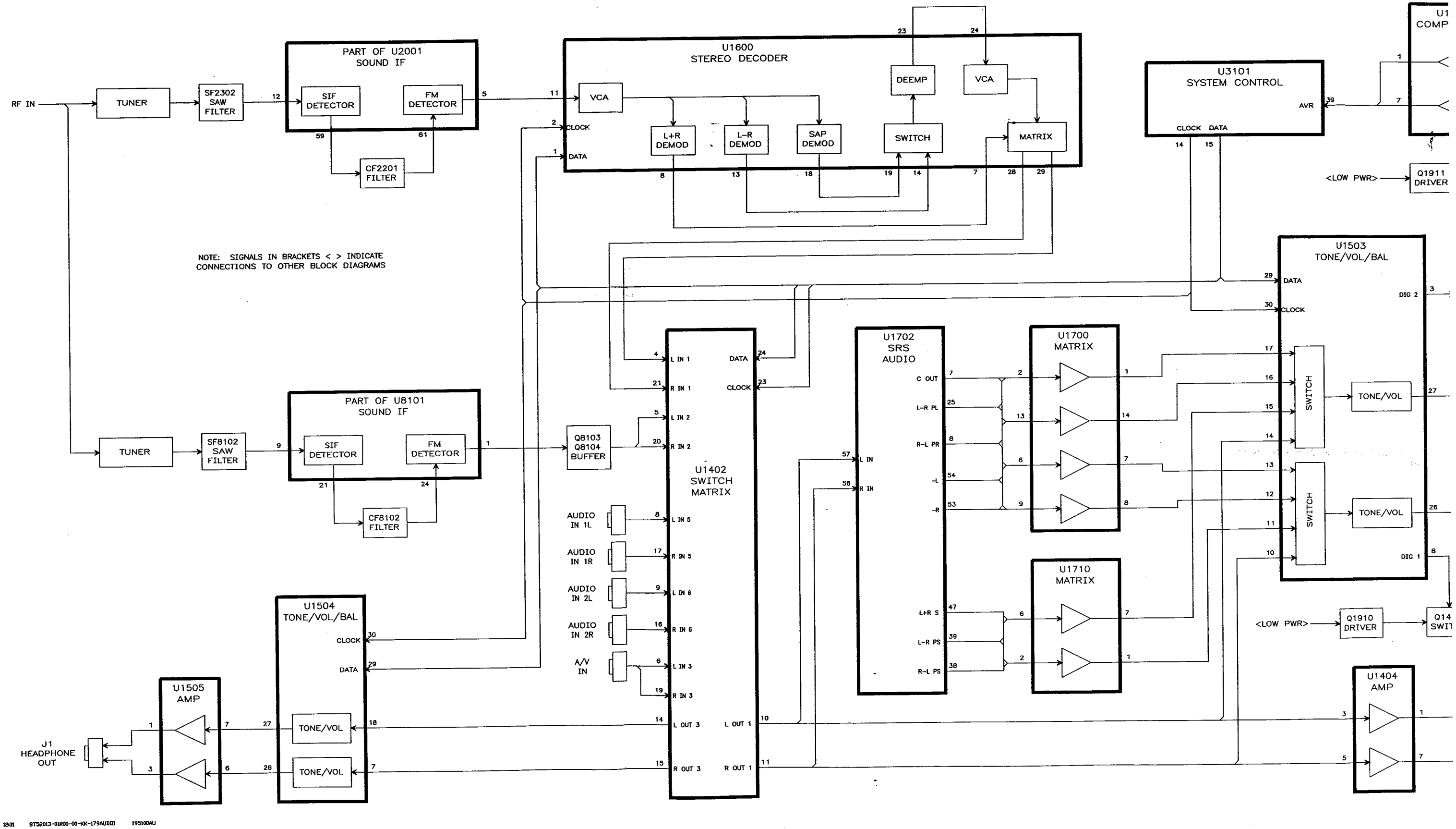
03/28/95 1241 BTS2013-05R00-00-KK-179VIDEO 195500V2

VIDEO BLOCK DIAGRAM (2 of 2)



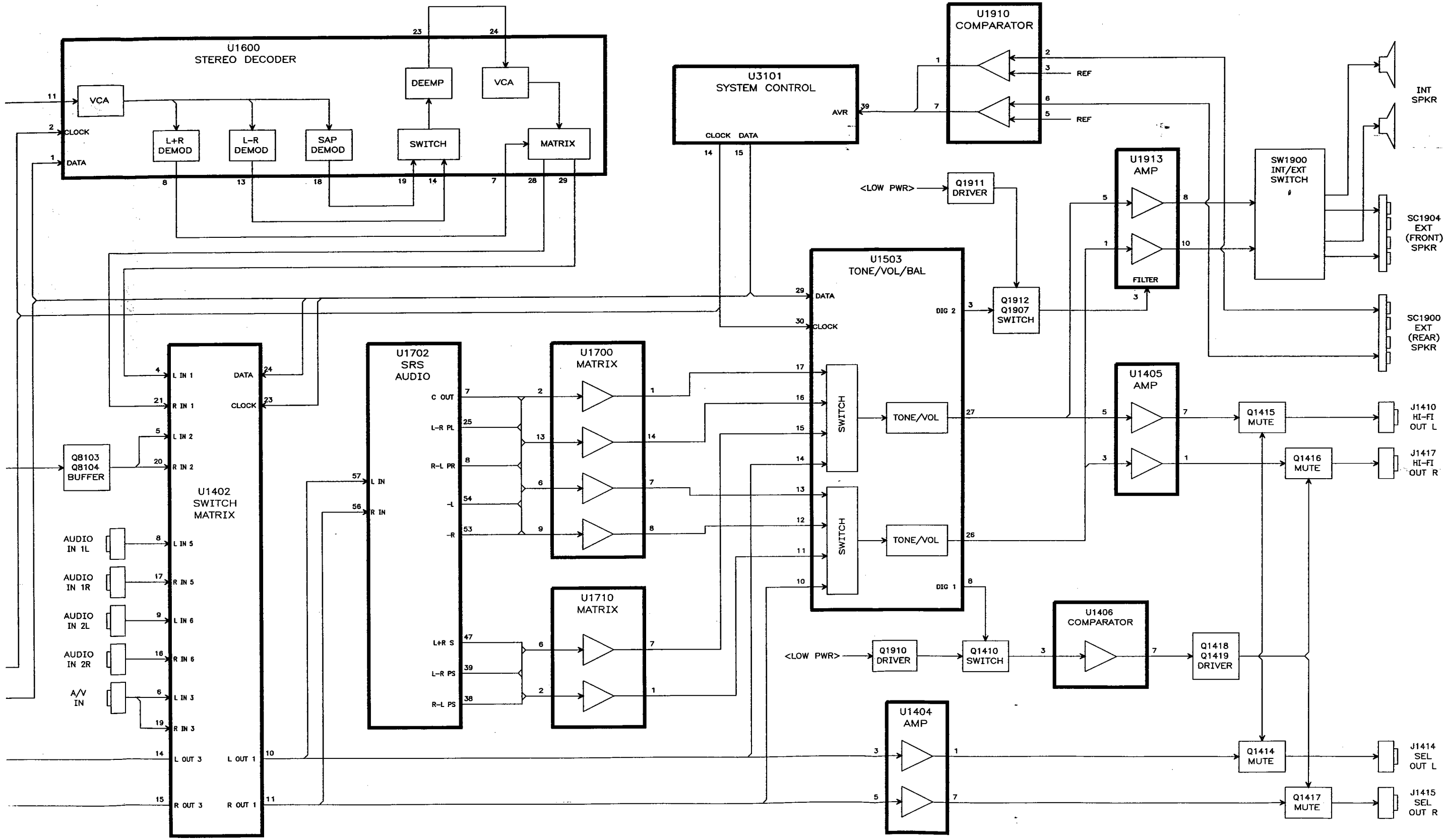
NOTE: SIGNALS IN BRACKETS < > INDICATE CONNECTIONS TO OTHER BLOCK DIAGRAMS

AUDIO BLOCK DIAGRAM



NOTE: SIGNALS IN BRACKETS < > INDICATE CONNECTIONS TO OTHER BLOCK DIAGRAMS

AUDIO BLOCK DIAGRAM



1-P1

CRITICAL COPPER PATTERN

Modern circuit design/manufacturing techniques permit high component density on the circuit boards in this instrument. To maintain high reliability and safety standards, the printed circuit boards are manufactured under carefully controlled conditions and to very close tolerances. Some areas of the board are more critical than others due to copper pattern spacing, pattern size, voltage/current requirements, etc. The manufacturer cautions that less-than-optimum repair of copper patterns in areas specified as safety related can degrade the reliability/safety of the instrument. Critical copper patterns are dark black in the illustrations. If the critical copper pattern is damaged (broken, lifted from board, etc.), special soldering techniques will be required to maintain reliability and safety standards. Contact your Field Service Manager before attempting copper pattern repair in the "Critical Copper" designated areas on the circuit board.

NOTE: Soldering irons used in the repair of this chassis should not exceed 60W and should have a small 1mm tip (Weller TCP/TC201). *DO NOT* hold soldering iron to copper pattern for any extended period of time. The copper trace could be damaged.

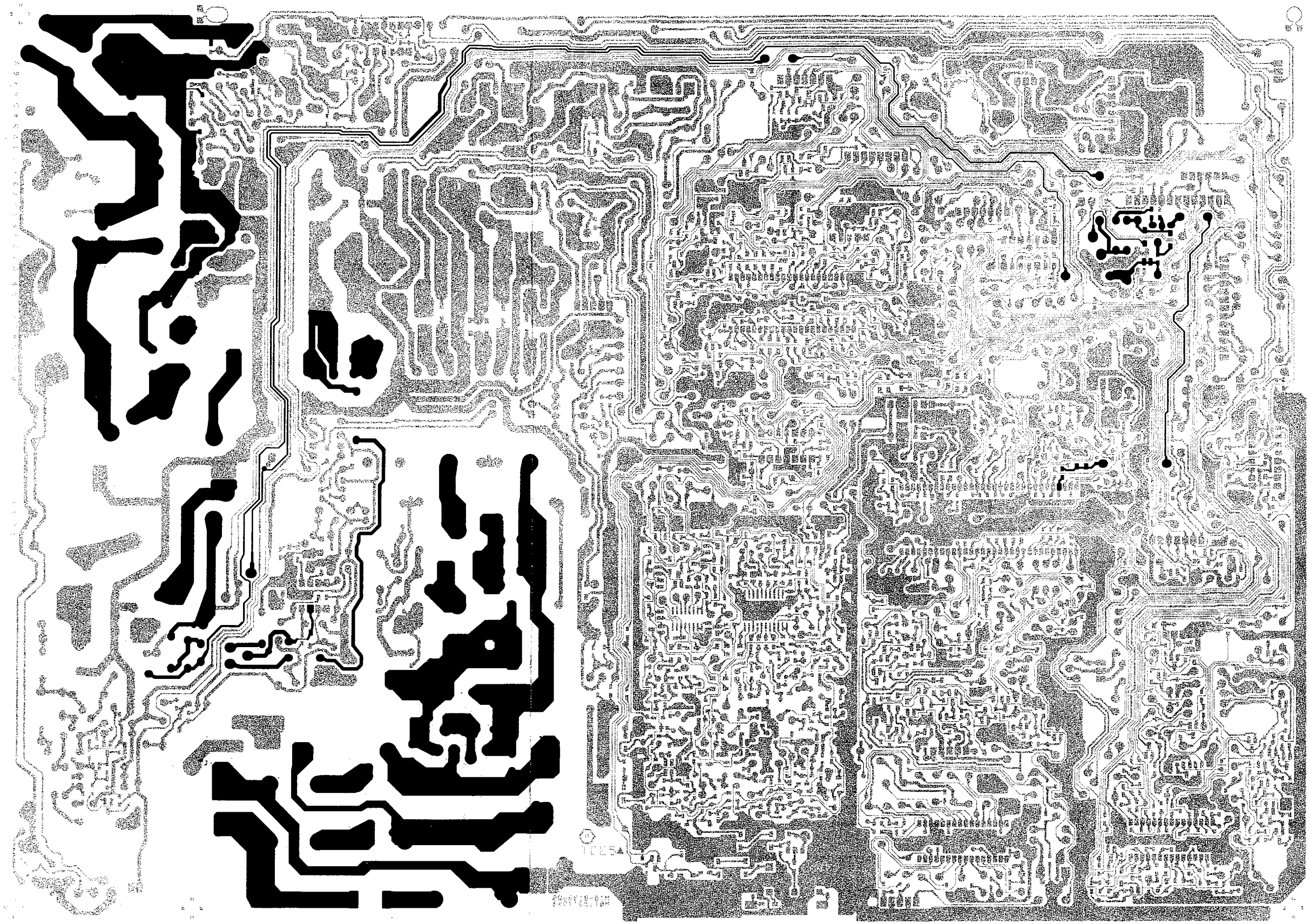
1-P1

1-P5

1-P2

1-P3

CRITICAL COPPER PATTERN



CRITICAL COPPER PATTERN